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54TH CONGRESS, 1st Session. } SENATE. { DOCUMENT 137, Part 1.

REPORTS

OF

AGENTS, OFFICERS, AND PERSONS, ACTING UNDER THE AUTHORITY OF THE SECRETARY OF THE TREASURY,

IN RELATION TO THE

CONDITION OF SEAL LIFE ON THE ROOKERIES OF THE PRIBILOF ISLANDS,

AND TO

PELAGIC SEALING IN BERING SEA AND THE NORTH PACIFIC OCEAN,

IN

THE YEARS 1893-1895.

IN TWO PARTS.

PART I.

[Part II (with maps and illustrations) contains results of investigations under the direction of the U. S. Commissioner of Fish and Fisheries.]

WASHINGTON:
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1896.

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CONDITION OF SEAL LIFE ON THE ROOKERIES OF THE PRIBILOF ISLANDS, 1893-1895.

The VICE-PRESIDENT presented the following

LETTER FROM THE ACTING SECRETARY OF THE TREASURY, TRANSMITTING, IN RESPONSE TO A RESOLUTION OF THE SENATE OF FEBRUARY 17, 1896, THE REPORTS MADE BY THE AGENTS, OFFICERS, OR PERSONS ACTING UNDER THE AUTHORITY OF THE SECRETARY OF THE TREASURY IN THE YEARS 1894 AND 1895, IN RELATION TO THE CONDITION OF THE FUR SEALS ON THE PRIBILOF ISLANDS, OR TO THE HUNTING OF SUCH ANIMALS IN BERING SEA OR IN THE NORTH PACIFIC OCEAN, AND THE EFFECT OF SUCH HUNTING UPON THE FUR SEALS THAT RESORT TO THE BERING SEA.

FEBRUARY 27, 1896.—Referred to the Committee on Foreign Relations and ordered to be printed.

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., February 26, 1896.

SIR: I have the honor to acknowledge the receipt of a resolution of the Senate, dated the 17th instant, wherein I am directed to furnish copies of the reports made by the agents, officers, or persons acting under the authority of the Secretary of the Treasury in the years 1894 and 1895, in relation to the condition of the fur seals on the Pribilof Islands, or to the hunting of such animals in Bering Sea or in the North Pacific Ocean, and the effect of such hunting upon the fur seals that resort to Bering Sea, and, in reply, to state that the preparation of the copies of such papers will involve great labor, and require considerable time, owing to the voluminous character of the documents. I therefore transmit the originals, with the request that they be returned to the files of the Department without mutilation in case the Senate should order them printed.

Respectfully, yours,

S. WIKE,
Acting Secretary.

The PRESIDENT OF THE SENATE.

CONDITION OF THE FUR SEALS OF THE PRIBILOF ISLANDS.

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., March 1, 1895.

SIR: Agreeably to your directions contained in Department letter, June 9, 1894, hereto annexed, I left Victoria, British Columbia, July 23 last on the United States revenue steamer *Rush* for the Pribilof Islands in Bering Sea and other points in the Territory of Alaska. I was accompanied by Mr. Joseph Murray, inspector of salmon fisheries, and Mr. John W. McGrath, secretary and stenographer.

I now have the honor to transmit a report, together with reports of Mr. Murray and other official documents, bearing upon the subject.

Our itinerary was as follows:

July 23, sailed from Victoria, British Columbia; July 31, arrived at Unalaska; August 1, at Unalaska; August 3 to 8, St. Paul Island (Pribilof); August 8, St. George Island; August 9, Unalaska; August 11, Akutan; August 12, Belkofski; August 13, Sand Point; August 14, Unga; August 16, 17, Karluk (Kadiak Island); August 18, St. Paul Island; August 21, Yakutat Bay; August 25, Sitka; August 26, 27, Juneau; August 28, Wrangell; August 29, Kasan, Loring, and Metlakhatla; August 30, Fort Simpson; September 3, Nanaimo and Vancouver.

The area of Alaska Territory has been estimated at 531,000 square miles—almost one-sixth of the total area of the United States. The population, according to the Eleventh Census, is 32,052; of which total 4,298 are whites, 2,288 Mongolians, 23,531 Indians, and 1,823 mixed.

The length of the coast line of Alaska, including the mainland and islands, is 26,364 miles, as compared with 3,690 for the Pacific Coast, 2,043 miles for the Atlantic Coast, and 1,810 miles for the Gulf Coast, including all islands.

Some conception of the distances between the various points in the Territory may be obtained from the following table:

	Statute miles.
From United States boundary on Portland Canal, Alaska, west to the island of Attu, approximately	2,374
From Sitka, Alaska, to the Pribilof Islands (seal islands) as a vessel sails	1,565
From Port Townsend, Wash., to Unalaska	1,949
From Port Townsend, Wash., to the Pribilof Islands	2,189
From San Francisco to Unalaska	2,374
From San Francisco to Pribilof Islands	2,614
From San Francisco to island of Attu	3,282
From San Francisco due west to meridian of Attu	3,513
From San Francisco due east to Washington	2,456

Between the Pribilof Islands and the city of Washington there is a *difference of time of* six and one fourth hours; between the Pribilof *Islands and San Francisco,* three hours.

The report of Inspector Murray, hereto annexed, and the other documents made a part of this report so completely set forth the present condition and needs of the Territory of Alaska, as well as its past history, that little more is left to me than generalization.

The subject matter naturally divides itself into several broad groups, viz: (1) The fur seal, (2) the salmon fisheries, (3) other fur-bearing animals, (4) the land question, (5) the liquor question, (6) the Indians.

I shall briefly consider these questions in order. It will be apparent that many details do not fall within the jurisdiction of the Treasury Department; nevertheless I deem it expedient to state what I saw and certain general conclusions thereon.

1. THE FUR SEAL OF ALASKA.

It is unnecessary to dwell, except very briefly, upon the history of the Pribilof Islands, one of the breeding places of the northern fur seal. Discovered about 1787 by Russians, they remained in the possession of Russia until ceded to the United States in 1867. From 1787 to 1805 there were a number of Russian companies on the islands, and the seals were ruthlessly slaughtered without regard to age or sex. In 1806 and 1807 killing was suspended and most of the Indians engaged in the killing were sent back to Unalaska, whence they were originally procured. From 1808 to 1834 killing was resumed with little care for the preservation of the herd. By 1834 the herd was threatened with extermination, and killing, except a limited number for food, was prohibited until 1841. In 1835 the principle of killing only male seals was adopted, and from that time on the herd was watched so carefully that in 1867, at the cession of Alaska, about 5,000,000 seals were on the islands, as many, as far as all evidence goes, as were there in 1787.

From the cession until 1871 the seal islands were free to all, and as a result over 250,000 seals were taken in one season. After 1870, however, the catch was strictly regulated and the monopoly of killing seals was leased to the Alaska Commercial Company for twenty years. At the expiration of this lease a new lease was made to the North American Commercial Company, which has not yet expired.

From 1870 to 1886 about 100,000 male seals were taken on the islands annually, without in any appreciable degree affecting the size of the herd. From 1886 on, however, causes were at work which soon became manifest in a rapid falling off of the seal herd, until in 1890 only about 25,000 could be taken on the islands as against over 100,000 in 1889.

The following table shows the total number of seals killed on the Pribilof Islands from 1870 to 1894, inclusive:

Grand total of seals killed for all purposes on the Pribilof Islands from 1870 to 1894, inclusive.

Year.	Number.	Year.	Number.	Year.	Number.
1870	23,773	1879	110,511	1888	103,304
1871	102,960	1880	105,718	1889	102,617
1872	108,819	1881	105,063	1890	25,701
1873	109,177	1882	99,812	1891	14,406
1874	110,585	1883	79,509	1892	7,509
1875	106,460	1884	105,434	1893	7,390
1876	94,657	1885	105,024	1894	15,033
1877	84,310	1886	104,521		
1878	109,323	1887	105,760	Total	2,047,374

The cause of the decrease in number found on the islands is now universally admitted to be the killing of female seals. As no female seals have been killed on the islands since 1834, it follows that the falling off is caused by pelagic sealing. From 1875 to 1880 vessels occasionally took seals at sea, but the number caught was insignificant. By 1880 the vessels engaged amounted to 16; in 1886, the fleet had increased to 34, and for the first time entered Bering Sea and commenced taking seals. The subsequent history is well known; the seizures and protests finally culminated in the treaty with Great Britain, the Paris Tribunal, and the award providing regulations under which pelagic sealing is now carried on.

The following table gives the number of seals killed at sea from 1868 to 1894, inclusive, dividing the catch into localities, as far as possible; also giving the number of vessels employed.

The figures prior to 1891 contain some seals killed on the Asiatic coast. It is not possible to distinguish such seals, however, from those killed on the eastern side of Bering Sea and the North Pacific Ocean, forming part of the Alaskan or American herd.

This table was compiled from the figures in the British and American cases before the Paris Tribunal and subsequent corrections taken from official reports and the official returns of the London trade sales:

Totals by localities.

Northwest Coast.	Bering Sea.	Asiatic.	Undetermined.	Total.	Year.	Vessels, appendix United States case, vol. 1.
						Page.
4,367	.....	.....	.....	4,367	1868	591
4,430	.....	.....	.....	4,430	1869	.....
8,686	.....	.....	.....	8,686	1870	.....
16,911	.....	.....	.....	16,911	1871	.....
5,336	.....	.....	.....	5,336	1872	.....
5,229	.....	.....	.....	5,229	1873	.....
5,873	.....	.....	.....	5,873	1874	.....
5,033	.....	.....	.....	5,033	1875	1
5,515	.....	.....	.....	5,515	1876	1
5,210	.....	.....	.....	5,210	1877	.....
5,544	.....	.....	.....	5,544	1878	1
8,557	.....	.....	310	8,867	1879	2
8,718	.....	.....	1,192	8,910	1880	16
10,382	.....	.....	.....	10,382	1881	12
15,551	.....	.....	.....	15,551	1882	15
14,057	2,500	.....	28	16,585	1883	13
16,971	.....	.....	212	17,183	1884	11
21,840	1,200	.....	1,920	24,960	1885	15
13,399	14,595	.....	11,000	38,994	1886	34
9,324	21,304	.....	16,000	46,628	1887	47
8,714	17,475	.....	726	26,915	1888	39
14,361	15,497	.....	13,300	43,158	1889	68
21,838	18,976	.....	11,000	51,814	1890	61
22,900	23,041	5,847	18,000	69,788	1891	115
46,642	.....	26,752	.....	73,394	1892	122
28,613	.....	72,045	8,342	109,000	1893	84
24,101	31,585	79,478	6,836	142,000	1894	95

From the above it will be seen that the pelagic catch of the past season of 1894, the first year in which the regulations of the Paris award were applicable, was the most destructive in the history of pelagic sealing, the total killed reaching 55,686, and, including undetermined skins, 62,522, as against only 15,033 killed on the islands.

From 1880 to 1894 the pelagic catch increased from 8,910 to 55,686, or 624 per cent, while the Pribilof Island catch decreased from 105,718 to *15,033, or 86* per cent.

When it is remembered that the evidence shows that about three-quarters of the seals killed at sea are females, it is easy to understand the inevitable falling off in the herd.

Our agents report a decrease in the seal herd of at least one-half since 1890, and it is apparent that commercial extermination is near at hand unless changes in the regulations of the Paris award are speedily agreed to.

It will be remembered that from June, 1891, to and through the season of 1893, under the modus vivendi agreed upon by the United States and Great Britain, all sealing in Bering Sea was prohibited pending the Paris award.

Undoubtedly this gave the seal herd great relief in securing for it immunity while on its breeding grounds and in the sea procuring food for the young pups. The subsequent regulations established by the Paris award also helped the herd by closing the North Pacific Ocean and Bering Sea during May, June, and July. This is seen at once in the North Pacific catch, exclusive of Bering Sea, which fell off from 46,642 in 1892, to 24,101 in 1894 (the falling off in 1893 to 28,613 is attributed to the fact that the vessels largely went over to the Asiatic shores). This good effect in the North Pacific is corroborated by the report of Mr. C. H. Townsend, of the United States Fish Commission, now on the Treasury files.

The regulations of the award, however, failed signally when applied to Bering Sea. Although the herd was protected in the North Pacific in May and June (while on the way to its breeding grounds), and in Bering Sea in July, yet it is safe to say the greater part of the advantages derived from the regulations was lost by permitting the sealers to kill outside of the 60-mile zone in August in Bering Sea. The old modus vivendi setting apart Bering Sea as a breeding ground was thereby done away with and the sea was opened to pelagic slaughter.

The fatal results were quickly to be seen. In the past season only 37 of the 95 vessels employed in sealing entered Bering Sea, yet in five weeks they killed 31,585 seals, 7,000 more than were killed by 95 vessels in four months on the American side of the North Pacific Ocean, exclusive of Bering Sea.

As a result of this slaughter, largely consisting of females, in Bering Sea, our agents this last fall counted 12,000 dead pups on the accessible portions of the rookeries. A careful estimate based on this count reaches 20,000 as a total of pups dying of starvation on the islands, their mothers being killed at sea.

Such slaughter can only result in the rapid extermination of the fur seal. Every effort should be made to secure modifications of the Paris award regulations. If such modifications be not agreed to, the fur seal within one or two seasons will be commercially exterminated.

It will be realized how valuable a source of revenue the Alaskan seal herd has been to the United States when the following table is considered, from which it appears that the total receipts from the Territory, of which all but an infinitesimal portion were derived from our sealing interests on the Pribilof Islands, since 1870, amounted to $6,373,463.08, while the total expenditures of the whole Territory of Alaska for the same period amounted to only $1,126,624.50.

To prevent speedy extermination, a new modus vivendi should be agreed upon pending a careful study of the habits, feeding grounds, and present condition of the fur-seal herd by a commission of scientists, who should recommend such suitable regulations for pelagic sealing as will ward off the otherwise inevitable extermination. Inasmuch as there

are other Governments also vitally interested in this question, notably Japan and Russia, we should invite their cooperation. I would suggest a commission of three members from each country to examine and report upon the questions involved, and that pending their examination and reports the respective Governments agree to prohibit all killing of seals on land or sea (save a limited amount on land for food for the Indians), or, failing in this, that the existing regulations established by the Paris award be extended to embrace the whole North Pacific Ocean, from shore to shore, with the additional provision that Bering Sea be absolutely closed to pelagic sealing.

In the investigation made by said commission, the methods of land killing, as well as pelagic sealing, should be studied. It may be remembered that Mr. Henry W. Elliott, formerly United States special agent, in his report of 1890, claimed that the methods of driving the seals on land were injurious to the herd. In this conclusion he is corroborated by Mr. Townsend, of the Fish Commission, whose report is also annexed. While both these gentlemen are agreed as to the dire results in the past and present of pelagic sealing, yet the fact that any question is raised by them as to the propriety of existing methods of land killing should be sufficient to relegate the question to said commission for careful investigation.

The United States should court the most rigid investigation of existing methods of slaughter, both on land and at sea. Out of such investigation there can not fail to come results beneficial to the seal herd and the valuable property interests of the United States therein.

SALMON FISHERIES.

Upon careful inspection of the salmon-fishing industry at Karluk, on the island of Kadiak, the principal site of the canning industries of Alaska, and of many other canneries scattered over the Territory, I am satisfied that the salmon are rapidly decreasing because of the incessant and indiscriminate fishing and the illegal use of weirs, nets, etc., thus obstructing the streams. By means of these obstructions and by continuous fishing in the streams the supply of salmon is gradually being exhausted. The result will be that the Indians will be reduced to starvation, as they are dependent upon the river catch for food.

I was also in receipt of many complaints from Indians to the effect that the canners refused to employ them in the canneries. My personal observation was that the greater part of the employees engaged in the business, at least as regards the fishermen, were aliens—Italians and others—and that of the workmen engaged in preparing and canning the salmon a large proportion were Chinese. This matter, however, has been carefully gone over by Inspector Murray in his report, to which I invite careful attention.

The present laws relating to salmon fishing in Alaska are inadequate and should be at once made more stringent. A rigid closed season should be provided and additional inspectors appointed to enforce the law. Annexed to Mr. Murray's report there will be found a draft of a bill containing such changes as seem expedient.

The canning of salmon is a very important industry in Alaska; it contributes nothing, however, to the wealth of the Territory, and I recommend that a small tax be imposed upon each case of salmon canned in the Territory as a rental for the privilege given to the canners to take salmon; thus some part of the expense of maintaining the Tertorial Government will be borne by those who take from it annually a *rich harvest* and contribute nothing in return.

LIQUOR.

In spite of the earnest efforts of the customs officers the smuggling of liquor into Alaska and its illegal sale to whites and Indians continues flagrantly and defiantly. Considering the vast area of the Territory, and its thousands of miles of coast line, it is perhaps not surprising that such illegal practices have not been completely broken up.

Complaint is also made that it is impossible to secure conviction of offenders against the liquor laws by jury trial because of sympathy with the accused. This renders it all the harder to enforce the law. This flagrant defiance of United States law is productive of evil results when the sale of liquor is to whites, but when extended to Indians its evil effects are almost impossible to describe.

Under the Russian rule the sale of liquor to natives was strictly prohibited except at high church festivals, but after the cession to the United States many vessels sailed to Alaska and gave the natives liquors in exchange for furs. The natives are passionately fond of liquor, and will do almost anything to secure it. Many murders by the Indians are directly traceable to liquor obtained in this way; these cases are rarely brought to the attention of the authorities. Much cruelty, such as wife beating and other crimes, is also caused by the use of liquor. I am of the opinion that some restriction should be placed upon the importation of articles which can be used by the Indians for making liquor, for example, flavoring extracts, bitters, Florida water, bay rum, eau de cologne, etc., which, although ostensibly imported as medicines, are obtained really for the alcohol contained therein.

If the United States Government can enforce the liquor laws, murder, infanticide, wife beating, and other crimes now common among the Indians would soon be unknown.

It may well be questioned whether the existing system of trial by jury is not a failure as regards the enforcement of the liquor laws. If, however, it is deemed advisable to retain the provision for trial by jury, I believe that both the grand and trial juries for the Territory should be selected by the judge of the United States district court. A similar practice now exists in the State of Tennessee, and has been held constitutional. It might be well also to give to the United States commissioners the power to enforce, without a jury, section 1955 of the Revised Statutes and section 14 of the act of May 17, 1884, as far as relates to the sale, manufacture, or importation of intoxicants.

Having carefully considered the question, it is my firm belief that the liquor question in Alaska can only properly be solved by having a system of high license and total prohibition of sales to Indians. In this way only will it be possible to regulate the traffic effectively.

While in Sitka I learned that many people were confined in jail because of offenses under the liquor law. I found also, to my great surprise, that some of them had been imprisoned since June, 1893, awaiting trial for offenses for which, on conviction, not over six months imprisonment could be imposed, there having been no term of court since the first-named date. These facts have been called to the attention of the Attorney-General.

FUR-BEARING ANIMALS.

THE SEA OTTER.

The value of sea-otter skins, just out of the water, to-day is about $200, whereas *fifteen years ago the price* would not average much over

$25. They are becoming very scarce because of indiscriminate slaughter in the past. When under Russian dominion the sea-otter grounds were divided into three districts, one-third being open to hunting each year. Firearms were prohibited and only bows and spears were permitted to be used, and whites were never employed as hunters. After the cession to the United States many whites engaged in hunting, and vessels were fitted out from Pacific ports with otter boats propelled by steam. The result has been almost extermination.

The sea otter, contrary to what is generally supposed, has no regular breeding time; it brings forth its young during every month in the year. To prevent its extermination hunting should be prohibited between May and October, and then should be allowed only by natives and whites married to natives.

While at Kodiak (St. Paul) a delegation of whites waited upon me and stated that they were deprived of the right to hunt sea otter in Alaska. This right had previously been limited by Treasury regulation to natives and to whites married to natives; that relying on the regulations then in force, they had married native women and had invested all their property in schooners, tackle, etc., and that on March 2, 1893, the regulation previously in force, permitting whites married to natives to hunt, was rescinded by President Harrison; that this took away all their means of support. They therefore asked that the old ruling as to whites married to natives be restored, and that the ruling of March 2, 1893, be rescinded.

I am of the opinion, after carefully examining the question, that such of these whites as married natives, relying on the existing law as laid down in the Treasury regulations of April 21, 1879, were wrongly deprived of the privilege of hunting otter by circulars of January 19, 1893, and March 2, 1893, and I believe that said circulars should be changed so as to permit such whites to engage in sea otter hunting.

I further recommend that the regulations prohibiting the sale of breech-loading firearms be changed. In the gold region about the Yukon River there are many traders who have much gold. They are surrounded by newcomers who have rifles, and they should also be permitted to have them. The natives now almost universally have Winchester rifles, but they buy them at enormous prices and have inferior weapons. Firearms are a necessity to Indians to-day, for without them they can not kill deer or bear upon which they depend for their support.

I am further of the opinion that the present prohibition against whites hunting land fur-bearing animals in Alaska should be discontinued. It was originally passed to protect the seals, but their killing is regulated now by other statutes, and this prohibition should be removed.

LAND FURS.

There should also be a closed season from April to October for each year for land fur-bearing animals. During this period furs are useless, but the natives can not resist the temptation of killing. For many years parts of the Territory have suffered from failure of reindeer because of indiscriminate slaughter in the past, simply for the tongue, eyes, and tallow, rejecting the meat. Said proposed closed season should also embrace deer and mountain sheep. There should further be a prohibition of the exportation of deer skins from the Territory, because of the indiscriminate slaughter carried on by the natives simply to procure the skins for export.

I am further in receipt of information that certain whites use poison to kill foxes. This should be prohibited under stringent penalties.

LAND LAWS.

The growth of the population in Alaska and the amount of money invested in the Territory is increasing yearly. It is believed that a large immigration will set in as soon as Congress shall extend throughout the Territory the general land laws or some other system enabling the settler to acquire private ownership in land, a privilege now accorded only to the occupiers of town sites, to the owners of mines and canneries, and persons engaged in trade and manufacture.

Many other suggestions will be found in the appended report of Inspector Murray. I merely call attention in this brief report to certain broad and general facts and conclusions noted by me during the course of my investigation.

Respectfully submitted.

CHARLES S. HAMLIN,
Assistant Secretary.

The SECRETARY OF THE TREASURY.

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., June 9, 1894.

SIR: In view of the representations made affecting the customs administration on the Pacific Coast, I desire you to visit San Francisco, Portland, Oreg., Port Townsend, and such other places as may be necessary, for the purpose of making a personal inspection of said ports in order to ascertain the exact condition of affairs and the remedies required to secure the proper conduct of the customs business. I also desire you to make such inquiries as may be practicable with reference to the salmon fisheries of Alaska, and the taking of seals on the Pribilof Islands. Should it be necessary, in your judgment, to visit Alaska, you should not hesitate to proceed there to obtain the desired information.

I inclose copies of bills which have been introduced in the House of Representatives affecting the salmon, trout, and other fisheries in the streams of Alaska. I also inclose a statement showing the number of seals taken for all purposes from 1870 to 1893, both inclusive, which may be of service to you in the course of your inquiries.

Instructions will be sent to the commanding officers of the revenue steamer *Rush* to the effect that said vessel will be at your disposal during such time as you may be on the Pacific Coast.

It is suggested upon your return that you give attention to the consular sealing system, under which merchandise is permitted to pass the frontier of the United States without critical inspection. The transportation of freight between American ports via Canada should also receive your attention.

You will please make your arrangements to enter upon these duties with as little delay as practicable, as the season is near at hand when your inquiries may be prosecuted with the greatest advantage.

Respectfully, yours,

J. G. CARLISLE, *Secretary.*

Hon. C. S. HAMLIN,
Assistant Secretary of the Treasury.

REPORT OF JOSEPH B. CROWLEY, SPECIAL TREASURY AGENT, FOR THE YEAR 1894.

OFFICE OF THE SPECIAL AGENT,
TREASURY DEPARTMENT,
Washington, D. C., January 4, 1895.

SIR: I herewith transmit my annual report for 1894, with exhibits attached, making a part of said report.

Respectfully, yours,

JOS. B. CROWLEY,
Special Treasury Agent.

The SECRETARY OF THE TREASURY.

OFFICE OF THE SPECIAL AGENT,
TREASURY DEPARTMENT,
Washington, D. C., November 20, 1894.

SIR: Pursuant to Department instructions dated May 4, 1894, I proceeded to the seal islands of Alaska, sailing from San Francisco May 19 on board the North American Commercial Company's steamer *Lakme*, Captain Bonnifield commanding.

I was accompanied by Special Agents Jacob E. Ziebach and James Judge, and we arrived at St. George Island on June 4, when, pursuant to Department instructions, I immediately relieved Special Agent Hall and placed Agent Ziebach in charge of the island.

On June 6 we reached St. Paul Island and found Special Agent Thomas E. Adams in charge, where he was permitted to remain until July 1, when he was temporarily relieved, and Special Agent Judge placed in charge, his appointment as special agent taking place on that date.

Agent Adams remained on St. Paul Island, rendering such service as was required, until the return of the steamer in September, when he accompanied me as far as San Francisco on his way home.

IMPROVEMENTS.

One of the most agreeable changes to be noticed on the islands since I first saw them is the improvement in the physical condition of the native inhabitants since sufficient "food, fuel, and clothing" have been furnished them. On my arrival at the islands in 1893, every family was visited and every dwelling inspected, and where we found a lack of beds, bedding, stoves, cooking utensils, wearing apparel, or other necessaries, they were immediately supplied, and the good resulting from this act of simple justice is quite apparent on all sides, and is very satisfactory.

Department order for the erection of a number of suitable water-closets is being complied with as rapidly as possible; the change is fully appreciated by the natives, and already the sanitary condition of the islands shows marked improvement.

That the morality of the people themselves has partaken of the general improvement is evident to all who observe their conduct closely; there are most certainly fewer carousals and much less drunkenness, and there is every evidence of a marked personal pride in the home and family relations.

It is the census returns, however, that show most clearly the good results of the improvement in the treatment of the natives, for ever since the change was made there has been less sickness and fewer deaths in proportion to births than ever before. (See Exhibits A and B.)

SCHOOLS.

The attention of the Department has been called to the school system in vogue on the islands by many of my predecessors in their annual reports, but nothing has been done thus far to remedy its many radical defects.

The fault is hardly that of the lessees or of the teacher, for they certainly supply a school building and school books, and the teacher is competent, capable, and attentive to his duties, endeavoring at all times to perform his part well and faithfully.

The trouble is one that lies deeper than the personality of the teacher or the necessary school supplies, and until the chief cause is removed there will be but little hope of success in the attempt to impart a knowledge of the English language to the natives of the Pribilof Islands.

The remedy lies in an "industrial school" where the pupils might be kept secluded from the older natives until the English tongue became theirs.

The annual report of the school teacher on St. Paul Island is attached, and marked Exhibit C.

FUEL.

Pursuant to instructions I contracted for 290 tons of coal to supply the Government houses and the native inhabitants on both of the islands. This amount, added to the 80 tons delivered by the lessees under their lease, making a total of 370 tons, was delivered by the North American Commercial Company and was distributed as follows:

	Tons.
St. Paul Island:	
Government house	10
Use of natives	240
St. George Island:	
Government house	10
Use of natives	100
Total	360

Owing to an error in weighing there is still due the natives of St. Paul 10 tons, which will be given them next season.

In my report for 1893 I asked that storehouses be erected on both of the islands in which to store the supply of natives' coal, and I again respectfully call attention to the necessity of having them built as soon as possible, for it is very unprofitable to leave the coal out of doors in the winds, rains, and snows of Alaska.

The houses need not be expensive affairs, and given the necessary material, the natives can build them immediately and thus save the cost in two *years by preventing the* present waste in slackage.

FOXES.

In December, 1893, there were trapped and killed by the natives of the islands of St. Paul and St. George 811 foxes, of which 770 were blue and 41 were white, divided as follows:

St. Paul:	
Blue	213
White	27
St. George:	
Blue	557
White	14
Total	811

The skins were sold to the lessees and were classed as follows: First grade, blue; second grade, blue; third grade, white.

The amount realized on the skins and credited to the natives was as follows:

St. Paul:	
First class, 146, at $5	$730
Second class, 67, at $4	268
Third class, 27, at $1	27
St. George:	
First class, 443, at $5	2,215
Second class, 114, at $4	456
Third class, 14, at $1	14
Total	3,710

The money received for fox skins is not a community fund, but is divided among the men who catch the foxes, each man getting credit for the full value of the skins he brings in.

The money is credited on his pass book and drawn against for food and necessaries until it becomes exhausted before he again becomes a charge on the Government.

This, too, is the system followed in the spending of the fund derived from the taking of seal skins; so long as the man has money to his credit, from daily earnings, he is self-supporting.

I respectfully call attention to the fact that on St. George Island this year the natives received for fox skins $2,685, while the earnings for taking seals were only $1,531, leaving a balance of $1,154 in favor of the foxes.

This, I think, is a lesson that should not be forgotten in future, especially as the indications are that unless a change takes place very soon by which the fur seal may be properly protected there will not be many left to take for any purpose, and the natives will have nothing to depend on but the blue fox.

Firmly believing in the necessity of fostering and preserving the foxes, I have ordered that none shall be trapped on the islands of St. Paul and St. George during the trapping season of 1894–95, but I gave permission to trap foxes on Otter Island, where none have been taken in many years.

SEALS.

I learned on my arrival at the islands that owing to the extremely long and cold winter and the amount of ice remaining around the beach late into May, the seals had not hauled out so freely as usual, and the assistant agents informed me that as late as May 14 passages had to be cut through the ice to allow the bull seals to reach the breeding grounds,

and after coming ashore they lay in the snow and ice that covered the rookeries.

About June 10–12 the young killable males began hauling out in goodly numbers, but at no time during the whole season of 1894 were there as many seals on the islands as hauled out in 1893.

The indications of decrease are to be seen on all sides in all classes of seals, but more particularly in the cows on the breeding grounds.

Beginning October 23 and ending November 30, 1893, there were killed on St. Paul Island, for natives' food, 774 killable seals, whose skins were merchantable and have since been accepted by the lessees.

Beginning October 20 and ending November 17, 1893, there were killed on St. George Island, for natives' food, 245 seals, whose skins have since been accepted, thus making the total of 1,019 skins on hand at the beginning of the season of 1894.

Beginning the season of 1894 May 9 and ending August 4, 12,196 seal skins were taken on St. Paul Island; and from May 23 to August 9, 2,817 seals were killed on St. George Island. The date of the drive, the rookery driven from, and the number taken at each killing during the season are attached and marked Exhibits D and E.

I have also attached copy of shipping receipts for the total number of skins taken by lessees during the fall of 1893 and killing season of 1894, marked Exhibit F.

Also report of distribution of the "Community fund" as Exhibits G and H.

The total number of skins shipped by the lessees in 1894 was 16,032, including the 1,019 food skins taken in the fall of 1893.

For taking, salting, and lading these skins the natives were paid 50 cents per skin, or $8,016.

The amount actually distributed was only $7,946, leaving $70 of a balance to be distributed next season.

The distribution of the $7,946 had really been made before the acceptance of 140 skins which were not considered first class, but which were afterwards accepted by the lessees' agent, and the natives will be paid next year.

DRIVING.

Only two drives from each rookery were permitted during the season of 1894. All long drives were avoided, and yet, in my opinion, there were as many skins taken as could have been obtained by the lessees had they been allowed to drive oftener.

I was anxious to have the driving done so carefully that there should not be any possibility of disturbance on the rookeries, and I feel satisfied that the plan adopted was a good one.

Had there been the number of young killables on the rookeries that Mr. Henry W. Elliott tells about in his work on Alaska, 1872–1880, there would have been no trouble in securing 100,000 skins, but the "amphibious millions" which Mr. Elliott saw in 1876 have passed away and where they swarmed by the million then is now a grass plat upon which a seal is never seen.

That the seal herd has been steadily decreasing during the past ten years is so self-evident now that no one denies it. Had the decrease been due to bad management on the islands it would most certainly have been proven during the years of the "modus vivendi," when not to exceed 7,500 seals were taken annually; but, in spite of a long rest of nearly five years, we could not get 20,000 killable seals on the islands in 1894, which shows beyond contradiction, I think, that the cause of the

steady annual decrease is to be found outside the islands, and as there is only one known cause to which the decrease can be attributed, the almost unanimous verdict of civilization is that the indiscriminate slaughter of seals by the pelagic sealer is the principal cause of the decrease in the herds.

From my own knowledge of the situation, gained by an experience of two seasons on the islands, I have no doubt whatever as to the cause of the decrease, for one has only to look at the official returns of the pelagic catch for 1894 to see at a glance that however numerous the seals may have been in 1884 they could not stand the drain made upon them for the past ten years without showing it.

From the best information obtainable it appears that the pelagic sealers secured 142,000 seal skins in 1894. The official figures from the American and British customs show that 122,000 skins were landed on the Pacific Slope, and there is good ground for the belief that the remainder were landed in Japan or Russian ports and shipped to London via the Suez Canal.

It is admitted on all sides that 70 per cent of the catch were females, mostly mother seals in young or in milk, whose death in either case meant the death of two seals, for it is well known that when a mother in milk is killed at sea her pup dies on the rookery for want of sustenance.

I do not make the statement of the death of the pups from starvation recklessly; there is positive proof of it.

In the latter part of August, 1894, when the first dead pups of the season appeared on the breeding grounds, I made daily visits to the rookeries and found hundreds of dead pups that had died of starvation.

Hundreds yet alive were so wasted, weak, and feeble they could with difficulty drag themselves over the rocks, and would not attempt to get out of the way when approached.

Between September 15 and 20 the Treasury agent on St. George counted the dead pups on all the accessible portions of the rookeries upon which he could climb without disturbing the seals, and, estimating the number not seen to be in proportion to those found, there were 4,110 dead pups on St. George Island.

The same method was followed on St. Paul, and the rookeries visited and dead pups actually counted on them are shown in the following table:

Date.	Rookery.	Dead pups.	Date.	Rookery.	Dead pups.
Oct. 3	Reef	1,901	Oct. 23	Lower Zapadnie	600
Oct. 6	Lukannon	847	Oct. 23	Lagoon	215
Oct 6	Ketavie	377	Oct. 23	Zoltoi	324
Oct. 11	Halfway Point	784	Oct. 23	Garbotch	267
Oct. 11	Northeast Point	2,849			
Oct. 23	Southwest Bay	2,143	Total		10,307

Tolstoi was not visited, and, as only the accessible portions of the rookeries could be reached, I consider I am below rather than above the mark when I put the number of dead pups on both the islands, in 1894, at 20,000.

One sight of the rookeries when the pups are dying by the hundred is enough to convince anyone of the truth of the claim made by the Treasury agents, that it is because of starvation, owing to the death of their mothers at sea, that so many pups die in August and September. *There is no* difficulty whatever in telling the difference between starv-

ing motherless animals with their flattened sides, feeble movements, and languid cries, and the well fed, rounded, romping ones that are to be seen in pods along the beach playing in the shallows.

I fear that this question of dead pups is not fully understood, nor are its lessons appreciated by the nations most deeply interested in the preservation of the seals, otherwise some steps would be taken immediately to put an end to the present mode of sealing at sea.

From the most reliable data at hand I find that during the nine years beginning with 1886 and ending with 1894 the following numbers of seals were taken by pelagic sealers:

Year.	Number.	Year.	Number.	Year.	Number.
1886	29,000	1890	66,000	1894	142,000
1887	45,000	1891	78,000		
1888	51,000	1892	85,000	Total	662,000
1889	57,000	1893	109,000		

I venture the assertion that the killing of that number entailed a loss of not less than 1,500,000 seals on the herds on both shores of Bering Sea.

So constant and so rapid has been the decrease of the seals on the Pribilof Islands, that in 1894 the only sign of increase to be observed over last year was among the large young bulls who were unable to find cows with which to form harems of their own. There were more idle bulls of breeding age on the rookeries than there were bulls with harems on the breeding grounds.

That the seals are steadily decreasing to an alarming extent, and that the principal cause of such decrease is pelagic sealing, can not longer be denied.

That the regulations adopted at Paris do not protect the female seals in Bering Sea has been proved the past season beyond the possibility of doubt, for never before in the history of the business did the pelagic sealers take so many seals as in 1894.

I therefore respectfully recommend that immediate steps be taken to amend the regulations, and that an international agreement be made, if possible, by which there shall be no sealing in Bering Sea for three years or until the rookeries have had time to recuperate from their present depleted condition, and other arrangements be made for the adequate protection of the females in the future.

If such an arrangement can not be arrived at, then I should advise the immediate killing of every seal on the Pribilof Islands rather than allow the islands to be used as a nursery for the propagation of an animal that is to be destroyed before our eyes by the subjects of another nation.

MISCELLANEOUS.

Pursuant to instructions dated May 5, 1894, Prof. Charles H. Townsend, of the United States steamer *Albatross*, was permitted to take a suitable specimen bachelor seal for the use of the Smithsonian Institution.

GUARDING ROOKERIES.

On September 1 a lieutenant and a boat's crew of armed marine guards were landed on each of the two islands, where they remained until November 1, when they were taken off by the revenue cutter Bear.

During their two months' stay on shore there was no call for their services, nor will there ever be so long as the Treasury agent does his duty and the natives are properly armed and treated like men.

It is due to the several naval officers commanding ships in Bering Sea that I say I found them all very willing to do anything they could for the benefit of the Government interest on the seal islands, and as early as June offers of assistance were made to me by the commanders of the *Petrel*, *Ranger*, and *Alert*.

The several vessels composing the fleet in Bering Sea were always at my service, in turn, whenever I wanted to go from island to island, and by this means I was enabled to attend to many matters of interest to the Department which, under other conditions, might have been neglected.

Except the depleted condition of the rookeries and the decrease of the seals, everything on the seal islands is very satisfactory.

Since the native people are better treated than in former years—having plenty of good food, fuel and clothing, and houses free from rent—there is evidence of good health, contentment, and happiness on every countenance.

The widows, orphans, aged, and indigent persons who have no other means of support, are well provided for by the lessees.

The conditions of the lease have been complied with in letter and in spirit by the lessees, and the most cordial relations exist between the Government and company agents, both in a social and business way.

Very respectfully submitted.

JOSEPH B. CROWLEY,
Special Treasury Agent, Seal Islands.

Hon. JOHN G. CARLISLE,
Secretary of the Treasury.

EXHIBIT A.—*Census of native inhabitants of St. Paul Island, June 30, 1894.*

Name and relationship.	Age.
Family 1—4 individuals:	
Artomanoff, Kerrick, husband	67
Artomanoff, Alexandra, wife	41
Prokapieff, Auxenia, daughter	26
Pranaff, Erdokea, orphan	20
Family 2—4 individuals:	
Arkashoff, Arseny, husband	27
Arkashoff, Marina, wife	34
Galaxteoniff, Claudia, orphan	12
Stepetin, John, stepson	16
Family 3—3 individuals:	
Bogodanoff, Nicoli, husband	22
Bogodanoff, Uleta, wife	27
Bogodanoff, Mary, sister	19
Family 4—4 individuals:	
Bourdukoffsky, Apolon, husband	40
Bourdukoffsky, Chiona, wife	33
Bourdukoffsky, Peter, son	14
Bourdukoffsky, Uleta, daughter	9
Family 5—4 individuals:	
Buterin, Karp, husband	40
Buterin, Parasciova, wife	58
Sedick, Constantine, son	6
Sedick, Zohor, orphan	8
Family 6—5 individuals:	
Emanoff, George, husband	26
Emanoff, Catherine, wife	20
Emanoff, Mary, daughter	2
Emanoff, John, son	*a* 1½
Koznitzoff, John, orphan	17
Family 7—5 individuals:	
Fratis, John, husband	48
Fratis, Aukolena, wife	20
Family 7—5 individuals—Continued.	
Fratis, Agrifina, daughter	2
Fratis, John, son	7
Fratis, Simoen, son	*a* 4½
Family 8—3 individuals:	
Glotoff, John, husband	26
Glotoff, Avdotia, wife	19
Glotoff, Mary, mother	66
Family 9—3 individuals:	
Gromoff, Nicoli, husband	26
Gromoff, Oulena, wife	24
Sedick, Elizabeth, orphan	5
Family 10—2 individuals:	
Galaxtioneff, Alex, husband	22
Galaxtioneff, Martha, wife	22
Family 11—1 individual:	
Hansen, Alex, bachelor	36
Family 12—2 individuals:	
Kochooten, John, husband	23
Kochooten, Tiania, wife	19
Family 13—7 individuals:	
Kochooten, Jake, husband	42
Kochooten, Ferronia, wife	39
Kochooten, Uleta, daughter	18
Kochooten, Ellen, daughter	9
Kochooten, Theodore, son	5
Kochooten, Farian, son	1
Lodoshinkoff, Natalia, stepdaughter	14
Family 14—3 individuals:	
Koochooten, Eupheme, husband	50
Koochooten, Pelogia, wife	43
Koochooten, Trepan, orphan	7

a Months.

EXHIBIT A.—*Census of native inhabitants of St. Paul Island, June 30, 1894*—Continued.

Name and relationship.	Age.
Family 15—6 individuals:	
Kozeroff, Stepan, husband	41
Kozeroff, Anastasia, wife	42
Kozeroff, Yvanelly, son	4
Kozeroff, Suenduli, daughter	3
Kozeroff, Alexandra, daughter	1
Nozikoff, Simoen, stepson	17
Family 16—2 individuals:	
Haleroff, Paul, husband	42
Haleroff, Agrifina, wife	52
Family 17—4 individuals:	
Krukoff, Nicoli, husband	43
Krukoff, Catherine, wife	33
Krukoff, Metropan, son	9
Krukoff, Oustenia, daughter	3
Family 18—4 individuals:	
Krukoff, Maxime, husband	37
Krukoff, Feotesta, wife	28
Krukoff, John, son	12
Krukoff, Condrat, son	3
Family 19—5 individuals:	
Kushin, Aggie, husband	48
Kushin, Mary, wife	38
Kushin, Lukeria, daughter	17
Kushin, Michael, son	9
Kushin, Nestor, grandson	1
Family 20—5 individuals:	
Mandregan, Neon, husband	36
Mandregan, Mary, wife	31
Mandregan, Mary, daughter	9
Mandregan, Zoya, daughter	7
Mandregan, Leokenty, son	3
Family 21—3 individuals:	
Merculiff, Alex, husband	18
Merculiff, Agrifira, wife	17
Merculiff, Paul, brother	4
Family 22—5 individuals:	
Melividov, Anton, widower	38
Melividov, Alexandra, daughter	12
Melividov, Olga, daughter	8
Melividov, Marcia, daughter	6
Melividov, Alexandra, mother	58
Family 23—3 individuals:	
Melividov, Alex, husband	19
Melividov, Salome, wife	19
Melividov, Anton, son	*a* 6
Family 24—3 individuals:	
Melividov, Simoen, husband	28
Melividov, Alexandra, wife	27
Melividov, Margaret, daughter	2
Family 25—4 individuals:	
Nederazoff, Stepan, husband	36
Nederazoff, Alexandra, wife	31
Nederazoff, Mary, niece	11
Stopoff, Weketa, orphan	3
Family 26—4 individuals:	
Nederazoff, Martin, husband	39
Nederazoff, Catherine, wife	36
Shane, Mary, stepdaughter	14
Shane, Parascovia, orphan	7
Family 27—5 individuals:	
Oustegoff, Peter, husband	30
Oustegoff, Parascovia, wife	26
Oustegoff, Neil, son	3
Oustegoff, Stepanda, mother	59
Shaisnikaff, George, orphan	11
Family 28—4 individuals:	
Pankaff, Parfiri, husband	31
Pankaff, Olga, wife	31
Pankaff, Vlasia, son	5
Pankaff, Vorara, daughter	2
Family 29—2 individuals:	
Paranchin, Daniel, husband	35
Paranchin, Elexandria, wife	32
Family 30—2 individuals:	
Shaisnikoff, Paul, bachelor	58
Shaisnikoff, Valerian, nephew	14
Family 31—4 individuals:	
Shabolin, Necon, husband	27
Shabolin, Tecla, wife	24
Shabolin, Agrifina, *daughter*	5
Shabolin, Apollanaria, daughter	*a* 5½
Family 32—9 individuals:	
Sedick, Theodore, husband	46
Sedick, Matha, wife	39
Sedick, Anastasia, daughter	18
Sedick, Mary, daughter	6
Sedick, Yustenia, daughter	5
Sedick, Matrona, daughter	1
Sedick, Inokentk, son	3
Sedick, Anna, daughter	*a* 3½
Sedick, Philip, nephew	15
Family 33—5 individuals:	
Seduli, Vassily, husband	51
Seduli, Elizabeth, wife	55
Seduli, Vera, daughter	13
Mazekan, Mary, orphan	21
Mazekan, Ivan, son	3
Family 34—3 individuals:	
Stepetin, Dorofay, husband	23
Stepetin, Vassa, wife	20
Stepetin, Vassily, son	1
Family 35—4 individuals:	
Stepetin, Elary, husband	30
Stepetin, Anna, wife	23
Stepetin, Oulena, daughter	4
Stepetin, Parla, daughter	2
Family 36—6 individuals:	
Terrakanoff, Kerrick, husband	40
Terrakanoff, Anna, wife	34
Shane, Elary, orphan	4
Nederazoff, Agrifina	25
Nederazoff, Alexia	4
Nederazoff, Mary	1
Family 37—3 individuals:	
Tetoff, Peter, husband	29
Tetoff, Mary, wife	33
Tetoff, Alexandra, sister	15
Family 38—4 individuals:	
Tetoff, Neon, husband	24
Tetoff, Agrifina, wife	19
Tetoff, Zaher, brother	14
Tetoff, Simoen, son	1
Family 39—7 individuals:	
Volkoff, Markel, husband	49
Volkoff, Alexandra, wife	40
Volkoff, Teron, son	2
Volkoff, Arefa, son	*a* 8
Volkoff, Ellen sister	40
Kushin, Mouvra, orphan	13
Merculiff, John, orphan	9
Family 40—5 individuals:	
Reseff, Nicoli, husband	64
Reseff, Marina, wife	57
Reseff, Olga, daughter	21
Ignatieff, Anna, orphan	15
Giteff, Mary, orphan	14
Family 41—1 individual:	
Bellaglozaff, Ellen, widow	58
Family 42—3 individuals:	
Koshernikoff, Ardita, widow	33
Koshernikoff, Paul, son	10
Merculiff, Martin, orphan	11
Family 43—1 individual:	
Krukoff, Anna, widow	28
Family 44—2 individuals:	
Krukoff, Natalie, widow	41
Krukoff, John, son	13
Family 45—3 individuals:	
Balakshin, Matrona, widow	41
Shoposhnikoff, Parascoria, orphan	27
Rookorishnikoff, Stepan, orphan	12
Family 46—4 individuals:	
Kozlaff, Parascoria, widow	35
Kozlaff, Michael, son	7
Kozlaff, Nicoli, son	5
Kozlaff, Anton, son	*a* 8
Family 47—2 individuals:	
Serebrinkoff, Olga, widow	29
Serebrinkoff, Repsemer, son	*a* 15
Family 48—3 individuals:	
Popoff, Ardotia, widow	34
Popoff, Erasania, daughter	4
Babakslin, Anna, daughter	9

a Months.

EXHIBIT A.—*Census of native inhabitants of St. Paul Island, June 30, 1894*—Continued.

Name and relationship.	Age.	Name and relationship.	Age.
Family 49—1 individual:		**Family 53—3 individuals:**	
Pishnikoff, Vassilisa, widow	34	Sedick, Daria, widow	50
Family 50—2 individuals:		Koochooten, Eilen, daughter	20
Popoff, Afanasia, widow	48	Koochooten, Zenoria, daughter	23
Shottvagin, Daria, orphan	13	**Family 54—4 individuals:**	
Family 51—3 individuals:		Petoff, Feclusia, widow	36
Rokorishnikoff, Annisia, widow	28	Petoff, Grene, daughter	8
Rokorishnikoff, Anna, daughter	9	Petoff, Sofia, daughter	6
Rokorishnikoff, Parascoria, daughter	4	Kechergrin, George, son	16
Family 52—1 individual:		**Family 55—2 individuals:**	
Rezanzoff, Anna, widow	60	Tarrentora, Anna, widow	74
		Tarrentora, Anna, daughter	41

RECAPITULATION.

Families	55	Males between 5 and 17 years	23
Native inhabitants	196	Males under 5 years	21
		Female adults	70
Female inhabitants	110	Females between 5 and 17 years	25
Male inhabitants	86	Females under 5 years	15
		Marriages	4
Females in excess of males	24	Births	9
Male adults	42	Deaths	7

Orphan children at Unalaska school.

	Age.
Sedick, Arotin	13
Krukaff, Lukaria	17
Koznitzoff, Agafia	16
Merculiff, Luboff	18
Granaff, Anastasia	16
Zacharoff, Feodosia	15
Zatzmanaff, Auxenia	13
Fratis, John	12
Resident native population	196
Number of native children absent at school	8
Total population	204

EXHIBIT B.—*Census of St. George Island, June 30, 1894.*

Name and relationship.	Age.	Name and relationship.	Age.
Galanin, Ocalena, widow	31	Malavansky, Stepineda, daughter of Repsemia	15
Galanin, Evan, son	12	Malavansky, Peter, son of Repsemia	6
Galanin, Parferi, husband	21	Menaloff, Joseph, son of Fevronia, but head of family	22
Galanin, Fevronia, wife	17	Menaloff, Fevronia, widow	40
Gorokoff, Cornell, husband	37	Menaloff, George, son of Fevronia	20
Gorokoff, Katrina, wife	39	Menaloff, Helena, daughter of Fevronia	9
Galanin, Alexander, adopted son	8	Menaloff, John, son of Fevronia	4
Kulikuloff, Evan, husband	48	Menaloff, Martha, daughter of Fevronia	1
Kulikuloff, Barbara, wife	49	Nederazoff, Nicoli, son of Eogenia, head of family	16
Zacharoff, Emanuel	14	Nederazoff, Eogenia, widow	40
Lekanoff, Stepan, husband	25	Nederazoff, Malinia, daughter	20
Lekanoff, Pelegia, wife	25	Nederazoff, Isador, son	3
Lekanoff, Anatole, son	4	Oustegoff, Alxia, husband	44
Lekanoff, Sergius, son	2	Oustegoff, Martha, wife	24
Lekanoff, Sarah, daughter	a 10	Oustegoff, Alxandra, daughter	1
Lestenkoff, Demetri, widower	31	Oustegoff, Simon, husband	30
Lestenkoff, Anna, daughter	7	Oustegoff, Mary, wife	18
Merculoff, Mark	9	Philimonoff, Adrian, husband	27
Lestenkoff, Rev. Innokenty, priest	64	Philimonoff, Parascovia, wife	30
Lestenkoff, Elizabeth, wife	60	Philimonoff, Pelegia, daughter	6
Lestenkoff, Mary, daughter	25	Philimonoff, Andronic, husband	27
Lestenkoff, Michael, son	22	Philimonoff, Zenovia, wife	28
Lestenkoff, Sarah, daughter	18	Philimonoff, Marina, daughter	4
Malavansky, Nicoli, bachelor, but head of family	29	Philimonoff, Mary, daughter	2
Malavansky, Repsemia, sister	34		
Malavansky, Wana, sister	19		

a Months.

EXHIBIT B.—*Census of St. George Island, June 30, 1894*—Continued.

Name and relationship.	Age.	Name and relationship.	Age.
Philimonoff, Leonta, daughter	a 3	Shane, Michael, son	27
Philimonoff, Eoff, husband	52	Menaloff, Stepan	4
Philimonoff, Oleta, wife	32	Menaloff, Neduda, at Unalaska school	14
Philimonoff, Gregory, son	21	Swetzoff, Eustice, husband	43
Philimonoff, Eogenia, daughter	20	Swetzoff, Christiana, wife	37
Philimonoff, Demetri, son	8	Swetzoff, Gregory, son	8
Oustegoff, Eproxia, stepdaughter	14	Swetzoff, Polixina	35
Oustegoff, Michael, stepson	9	Swetzoff, Paul, son	2
Oustegoff, Susanna, stepdaughter	7	Menaloff, Evan, son of Wassalesa, head of family	17
Prokopeoff, Peter, husband	29	Menaloff, Wassalesa, widow	42
Prokopeoff Stepineda, wife	17	Menaloff, Alexandra, daughter	16
Prokopeoff. Aufanasia, brother of Peter	16	Menaloff, Nicoli, son	13
Rezanzoff, Fedosia, widow	50	Menaloff, Eudokia, daughter	10
Rezanzoff, Innokenty, son of Fedosia	16	Menaloff, Helen, daughter	7
Rezanzoff, Serefina, granddaughter of Fedosia	7	Philimonoff, Niacen, husband	44
Rezanzoff, Peter, husband	48	Ruzanzoff, Eudokia, wife	21
Rezanzoff, Matrona, wife	52	Ruzanzoff, Innokenty, son	19
Rezanzoff, Tatiana, daughter	10	Ruzanzoff, Fedosia, daughter	13
Shane, Raiesa, widow	42	Ruzanzoff, Zoia, daughter	2
Shane, Oleta, daughter	25	Ruzanzoff, Joseph, son	a 5

a Months.

Males, 42; females, 48—total, 90.

Birth record.

Date.	Name.	Sex.	Name of parents.
July 8, 1893	Martha	F	Fevronia Merculoff, mother.
Aug. 30, 1893	Sarah	F	Stepan and Pelegia Lekanoff.
Feb. 4, 1894	Joseph	M	Simeon and Eodokia Philimonoff.
May 6, 1894	Leonta	F	Andronic and Zenovia Philimonoff.

Mortality record.

Date.	Name.	Age.	Sex.	Cause.	Name of parents.
Dec. 14, 1894	Simeon Philimonoff	2	M		Son of Andrian and Parascovia.
Jan. 18, 1894	Arkenty Nederazoff	42	M		
May 14, 1894	Helena Lestenkoff	29	F	Consumption	Daughter of Rev. Innokenty.

Marriage record.

Date.	Contracting parties.	Remarks.
Sept. 8, 1893	Simeon Oustegoff and Mary Teracanoff	At St. Paul.
Nov. 19, 1893	Peter Prokopeoff and Stepineda Merculoff	
Nov. 22, 1893	Parferi Galanin and Fevronia Swetzoff	

J. E. ZIEBACH, *Assistant Treasury Agent.*

EXHIBIT C.—*Report of St. Paul Island school.*

ST. PAUL ISLAND SCHOOL, *August 15, 1894.*

DEAR SIR: I herewith submit to you the following statement of time of tuition and study throughout the eight school months:

Nine o'clock a. m.—Calling the roll, 5 minutes; time for study, 25 minutes (slate work); arithmetic, 30 minutes; alphabet, 20 minutes; spelling, 20 minutes; recess, 20 minutes; Fourth Reader, 25 minutes; Third Reader (class 1), 20 minutes; primer, 15 minutes.

One o'clock p. m.—Third Reader (class 2), 20 minutes; Second Reader, 20 minutes; First Reader, 20 minutes; alphabet, 15 minutes.

Monday and Wednesday, geography; Tuesday and Thursday, penmanship; Friday, United States History. The foregoing subjects are taught thirty-five minutes each day, respectively.

Yours, respectfully, S. MELOVIDOV.

Mr. J. B. CROWLEY,
Special United States Treasury Agent.

Report of St. Paul Island school for the first term, 1893.

ST. PAUL ISLAND, ALASKA, *December 31, 1893.*

DEAR SIR: The following is a report of St. Paul Island school for the first term, commencing September 4, 1893, and ending December 22, 1893.

	Name.	Age.	Number days present.	Number days absent (in doctor's care).	Number times tardy.	Branches of study pursued.					
						Alphabet (first lessons in reading).	Reading.	Spelling.	Writing.	Arithmetic.	Geography.
	Boys.										
1	Peter Bourdukofsky	14	72	0	0	.....	2	2	2	2	2
2	John Fratis	7	72	0	0	.....	1	1	2	1	....
3	Trefon Kotchooten	7	72	0	0	.....	2	1	2	1	....
4	Paul Kosheonikof	10	72	0	2	.....	1	1	2	1	....
5	Michael Kozlof	7	72	0	1	2	....	....	1	....	....
6	Michael Kushin	9	72	0	0	.....	2	2	2	1	....
7	Metrofan Krukof	9	72	0	0	.....	2	2	2	1	....
8	John Krukof (1)	13	72	0	1	.....	2	2	2	2	2
9	John Krukof (2)	12	72	0	0	.....	2	2	2	1	....
10	John Merculief	9	72	0	1	.....	2	2	2	1	....
11	Martin Merculief	11	72	0	2	.....	2	2	2	1	....
12	Stepan Rookovishnikof	12	72	0	0	.....	2	2	2	1	....
13	Innokenty Sedick	8	71	1	0	.....	2	2	2	1	....
14	Zachar Sedick	8	72	0	0	.....	1	1	2	1	....
15	Constantine Sedick	6	64	8	0	1	....	....	1	....	....
16	Valerian Shaishnikof	14	72	0	1	.....	2	2	2	2	2
17	George Shaishnikof	11	72	0	0	.....	2	2	2	2	2
18	Zachar Tetof	14	72	0	1	.....	2	2	2	2	1
	Total	181	287	9	9	2	16	16	18	16	5
	Girls.										
19	Anna Balakshin	9	69	3	0	.....	2	2	2	2	1
20	Ouleta Bourdukofsky	9	72	0	0	.....	2	2	2	1	....
21	Clavdia Galaktionof	14	72	0	6	.....	2	2	2	2	....
22	Ellen Kotchooten	9	72	0	0	2	....	....	1	....	....
23	Mavra Kushin	13	72	0	0	.....	2	2	2	2	1
24	Natalia Lodoshnikof	14	70	2	1	.....	2	2	2	2	2
25	Mary Mandregan	9	72	0	1	.....	2	2	2	1	....
26	Zoe Mandregan	7	59	13	0	1	....	....	1	....	....
27	Alexandra Melovidof	12	72	0	0	.....	2	2	2	2	2
28	Olga Melovidof	8	72	0	0	.....	2	2	2	1	1
29	Mary Melovidof	6	72	0	0	1	....	....	1	....	....
30	Mary Nedarezof	11	72	0	1	.....	2	2	2	1	....
31	Anna Rookovishnikof	9	72	0	0	.....	1	1	1	1	....
32	Vera Sedulee	13	67	5	0	.....	2	2	2	1	1
33	Elizabeth Sedick	6	72	0	1	1	....	....	1	....	....
34	Mary Sedick	6	72	0	0	1	....	....	1	....	....
35	Mary Shane	14	70	2	0	.....	2	2	2	2	2
36	Daria Shutyagan	13	72	0	0	.....	1	1	1	1	....
37	Irena Tetof	8	72	0	0	.....	2	2	2	1	....
38	Sophia Tetof	6	72	0	0	1	....	....	1	....	....
	Total	196	1,415	25	10	6	14	14	20	14	7
	Grand total	377	2,702	34	19	8	30	30	38	30	12

GENERAL SUMMARY.

Number of pupils enrolled (males, 18; females, 20)	38
Average daily attendance	$37\frac{34}{72}$
Average daily absence	47
Average per cent of attendance	99
Number of cases of tardiness	19
Average age of pupils	$9\frac{11}{12}$
Number weeks of school	$14\frac{2}{5}$
Number days of school	72

Names of text-books used: McGuffey's Primer; McGuffey's First Reader; McGuffey's Second Reader; McGuffey's Third Reader; McGuffey's Fourth Reader; Robinson's Arithmetic; Cornell's Geography; Scribner's Copy-book.

SIMEON A. MELOVIDOV, *Teacher.*

Mr. T. E. ADAMS,
United States Treasury Agent.

Report of St. Paul Island school for the second term, 1894.

ST. PAUL ISLAND, ALASKA, *April 30, 1894.*

Mr. T. E. ADAMS, *United States Treasury Agent:*

The following is a report of St. Paul Island school for the second term, commencing January 15, 1894, and ending April 30, 1894:

	Name.	Age.	Number of days present.	Number of days absent.	Number of times tardy.	Branches of study pursued.					
						Reading.	Spelling.	Writing.	Arithmetic.	Geography.	United States history.
	Boys.										
1	Peter Bourdukofsky	15	70	0	0	2	2	2	2	2	....
2	John Fratis	8	70	0	0	1	2	1	1	....	....
3	George Kotchergan	16	68	2	0	2	2	2	2	2	1
4	Treton Kotchooten	8	70	0	1	1	2	1	1	....	....
5	Paul Kosheonikof	11	70	0	4	1	2	1	1	....	....
6	Michael Kozlof	8	70	0	0	2	2	2	1	....	....
7	Michael Kushin	10	70	0	0	2	2	2	2	....	....
8	Metrofan Krukof	10	70	0	0	2	2	2	2	....	....
9	John Krukof (M)	14	70	0	0	2	2	2	2	2	1
10	John Krukof (N)	13	70	0	0	1	2	1	1	....	....
11	John Merculief	10	70	0	0	2	2	2	2	....	....
12	Martin Merculief	12	70	0	2	2	2	2	2	....	....
13	Simeon Nozikof	18	70	0	0	1	1	1	1	1	1
14	Stepan Rookovishnikof	13	70	0	0	2	2	2	2	....	....
15	John Stepetin	16	70	0	0	1	1	1	1	1	....
16	Philip Sedick	17	70	0	1	1	1	1	1	1	....
17	Innokenti Sedick	9	70	0	0	2	2	2	2	....	....
18	Zachar Sedick	9	70	0	1	1	2	1	1	....	....
19	Constantin Sedick	7	68	2	1	1	1	1	1	....	....
20	Valerian Shaishinkof	15	70	0	0	2	2	2	2	2	1
21	George Shaishinkof	12	70	0	1	2	2	2	2	2	....
22	Zachar Tetof	15	70	0	0	2	2	2	2	2	....
	Total	266	1,536	4	11	22	22	22	22	9	4
	Girls.										
23	Anna Balakshin	10	67	3	0	2	2	2	2	2	1
24	Onletar Bourdukofsky	10	70	0	0	2	2	2	2	....	....
25	Claydia Galaktionof	15	70	0	3	2	2	2	2	....	....
26	Ellen Kotchooten	10	70	0	1	1	1	1	1	....	....
27	Mavra Kushin	14	70	0	0	2	2	2	2	2	....
28	Natalia Lodoshinkof	15	70	0	1	2	2	2	2	2	1
29	Mary Mandregan	10	70	0	0	2	2	2	2	....	....
30	Zoe Mandregan	8	66	4	0	1	1	1	1	....	....
31	Alexandra Melovidof	13	70	0	0	2	2	2	2	2	1
32	Olga Melovidof	9	70	0	0	2	2	2	2	2	....
33	Mary Melovidof	7	69	1	0	2	1	2	1	....	....
34	Mary Nedarezof	12	70	0	0	2	2	2	2	....	....
35	Anna Rookovishinkof	10	70	0	0	1	2	1	1	....	....
36	Vera Sedulee	14	70	0	0	2	2	2	2	2	....
37	Elizabeth Sedick	7	67	3	0	2	1	1	1	....	....
38	Mary Sedick	7	70	0	0	2	1	1	1	....	....
39	Mary Shane	15	70	0	0	2	2	2	2	2	1
40	Daria Shutyagan	14	70	0	0	1	2	1	1	....	....
41	Irena Tetof	9	70	0	0	2	2	2	2	....	....
42	Sophia Tetof	7	70	0	0	2	1	1	1	....	....
	Total	216	1,389	11	5	20	20	20	20	7	4
	Grand total	482	2,925	15	16	42	42	42	42	16	8

GENERAL SUMMARY.

Number of pupils enrolled (males, 22; females, 20)	42
Average daily attendance	41 55/70
Average daily absences	21
Average per cent of attendance	99
Number of cases of tardiness	16
Average age of pupils	11½
Number weeks of school	14
Number days of school	70

Names of text-books used: McGuffey's Fourth Reader, McGuffey's Third Reader, McGuffey's Second Reader, McGuffey's First Reader, McGuffey's Primer, McGuffey's Spellers, Robinson's Arithmetics, Cornell's Geography, United States History, Payson, Dunton and Scribner's *copy books.*

SIMEON A. MELOVIDOV, Teacher.

EXHIBIT D.—*Annual statement of fur seals killed on St. Paul Island, Alaska, during the year ended August 7, 1894.*

Date.	Rookery.	Number of seals killed for natives' food.			Number of seals killed by lessees for skins.				Aggregate.		
		Large young seals.	Skins accepted by lessees.	Skins rejected (under size).	Accepted (prime).	Rejected. Under size.	Rejected. Cut.	Total.	Skins accepted.	Skins rejected.	Total number of seals killed.
1894.											
May 9	Sea Lion Rock	87	87	.....	.....	.....	.....	.....	.....	.....	.....
23	Tolstoi and Reef	104	104	.....	.....	.....	.....	.....	.....	.....	.....
24	Watchmen, Northeast Point	4	4	.....	.....	.....	.....	.....	.....	.....	.....
31	Garbotch	141	140	1	.....	.....	.....	.....	.....	.....	.....
June 2	Watchmen, Northeast Point	2	2	.....	.....	.....	.....	.....	.....	.....	.....
10	Watchmen, Southwest Bay	5	5	.....	.....	.....	.....	.....	.....	.....	.....
13	Watchmen, Northeast Point	4	4	.....	.....	.....	.....	.....	.....	.....	.....
14	Reef	.....	.....	.....	1,211	4	.....	1,215	1,211	4	1,215
16	Watchmen, Southwest Bay	.....	.....	.....	2	.....	.....	2	2	.....	2
19	Tolstoi and Middle Hill	.....	.....	.....	539	2	.....	541	539	2	541
23	Zapadnie	.....	.....	.....	846	3	1	850	846	4	850
20	Watchmen, Northeast Point	.....	.....	.....	2	.....	.....	2	2	.....	2
25	Lukannon	.....	.....	.....	553	5	.....	558	553	5	558
27	Watchmen, Northeast Point	.....	.....	.....	2	.....	.....	2	2	.....	2
July 2	Zoltoi	.....	.....	.....	959	8	.....	967	959	8	967
2	Watchmen, Southwest Bay	.....	.....	.....	1	.....	.....	1	1	.....	1
4	Northeast Point (south side)	.....	.....	.....	852	17	.....	869	852	17	869
5	Northeast Point (north side)	.....	.....	.....	905	12	.....	917	905	12	917
6	Half Way Point	.....	.....	.....	516	6	.....	522	516	6	522
7	Watchmen, Southwest Bay	.....	.....	.....	2	.....	.....	2	2	.....	2
13	Lukannon	.....	.....	.....	246	5	.....	251	246	5	251
14	Watchmen, Northeast Point	.....	.....	.....	5	.....	.....	5	5	.....	5
17	Zapadnie	.....	.....	.....	933	11	.....	944	933	11	944
21	Reef	.....	.....	.....	1,171	6	.....	1,177	1,171	6	1,177
23	Watchmen, Southwest Bay	.....	.....	.....	2	.....	.....	2	2	.....	2
23	Northeast Point (sand beach)	.....	.....	.....	362	8	.....	370	362	8	370
24	Northeast Point (north and east sides)	.....	.....	.....	1,016	9	.....	1,025	1,016	9	1,025
25	Northeast Point (south side)	.....	.....	.....	901	9	.....	910	901	9	910
30	Middle Hill	.....	.....	.....	150	4	.....	154	150	4	154
Aug. 1	Half Way Point	287	284	3	.....	.....	.....	.....	.....	.....	.....
4	Reef	272	269	3	.....	.....	.....	.....	.....	.....	.....
4	Watchmen, Southwest Bay	4	4	.....	.....	.....	.....	.....	.....	.....	.....
	Total	910	903	7	11,176	109	1	11,286	11,176	110	11,286

I hereby certify that all skins herein indicated as having been rejected were afterwards accepted by the lessees as prime skins.

October 8, 1894.

JOS. B. CROWLEY,
Special Treasury Agent.

Annual statement of fur seals killed on St. Paul Island, Alaska, from October 23 to December 30, 1894.

Date.	Rookery.	Number of seals killed for natives' food.				
		Large young seals.	Skins accepted by lessees.	Skins rejected.		
				Under size.	Stagy.	Cut.
1893.						
Oct. 23	By watchmen to date	9	9	.....	.....	.....
Nov. 2	Zoltoi	69	69	.....	.....	.....
6	By watchmen for food	7	7	.....	.....	.....
7	Middle Hill	82	79	.....	3	.....
14	By watchmen for food	6	6	.....	.....	.....
14	Reef	173	170	3	.....	.....
20	By watchmen for food	4	4	.....	.....	.....
22	Reef	208	207	.....	.....	1
27	By watchmen for food	3	3	.....	.....	.....
27	Tolstoi	188	175	13	.....	.....
30	Halfway Point and Zapadnie watchhouses	25	22	3	.....	.....
	Total	774	751	19	3	1

I hereby certify that all the seal skins above indicated as having been rejected were afterwards accepted by the lessees as prime skins.

October 8, 1894.

JOSEPH B. CROWLEY,
Special Treasury Agent.

I hereby certify that the above is a true and correct statement of fur seals killed on St. Paul Island during the period named, and that the skins of the same have been salted in the North American Commercial Company's salt house.

THOMAS E. ADAMS,
Assistant Special Treasury Agent.

EXHIBIT E.—*Annual statement of fur seals killed on St. George Island, Alaska, during the year ended August 8, 1894.*

Date.	Rookery.	Number of seals killed for natives' food.		Number of seals killed by lessees for skins.		Aggregate.		
		Large young seals.	Skins accepted by lessees.	Accepted.		Skins accepted.	Skins rejected.	Total number of seals killed.
				Prime.	Second-class.			
1893.								
Oct. 20	North	30	30	.....	.....	.....	.....	.....
23	Zapadnie	77	77	.....	.....	.....	.....	.....
25	Zapadnie (by guards for food)	4	4	.....	.....	.....	.....	.....
27	East and North	47	47	.....	.....	.....	.....	.....
Nov. 1	Zapadnie (by watchmen)	4	4	.....	.....	.....	.....	.....
6	North and Starry Arteel	38	38	.....	.....	.....	.....	.....
7	East	9	9	.....	.....	.....	.....	.....
8	Zapadnie (by watchmen)	4	4	.....	.....	.....	.....	.....
14	....do	1	1	.....	.....	.....	.....	.....
17	North and Starry Arteel	31	31	.....	.....	.....	.....	.....
	Total	245	245	.....	.....	245	.....	245
1894.								
May 23	North	.....	.....	40	.....	40	.....	40
June 8	....do	.....	.....	126	.....	126	.....	126
June 15	Zapadnie (by watchmen)	3	3	.....	.....	.....	.....	.....
23	Great East	.....	.....	826	.....	826	.....	826
26	Zapadnie (by watchmen)	3	3	.....	.....	.....	.....	.....
July 2	Starry Arteel	.....	.....	468	.....	468	.....	468
3	Zapadnie (by watchmen)	4	4	.....	.....	.....	.....	.....
9	Zapadnie	.....	.....	303	.....	303	.....	303
13	Great East	.....	.....	275	.....	275	.....	275
16	Starry Arteel	.....	.....	181	.....	181	.....	181
21	North	.....	.....	249	.....	249	.....	249
24	Zapadnie (by watchmen)	3	3	.....	.....	.....	.....	.....
26	Zapadnie	.....	.....	178	.....	178	.....	178
Aug. 6	Little East and North	.....	.....	152	1	152	1	153
7	Zapadnie (by watchmen)	3	3	.....	.....	.....	.....	.....
9	....do	3	3	.....	.....	.....	.....	.....
	Total	19	19	.....	.....	19	.....	19
	Grand total	.....	.....	.....	.....	3,062	1	3,063

J. E. ZIEBACH, *Treasury Agent.*

EXHIBIT F.

ISLAND OF ST. GEORGE,
Bering Sea, Alaska, August 23, 1894.

This is to certify that 3,062 fur-seal skins have this day been shipped on board the North American Commercial Company's steamer *Lakme*, S. Bonifield, master, consigned to the North American Commercial Company, San Francisco, Cal.

JACOB E. ZIEBACH,
Assistant Treasury Agent.

ISLAND OF ST. PAUL,
Bering Sea, Alaska, August 29, 1894.

This is to certify that 12,969 fur-seal skins have this day been shipped on board the North American Commercial Company's steamer *Lakme*, S. Bonifield, master, consigned to the North American Commercial Company, San Francisco, Cal.

JAMES JUDGE,
Assistant Treasury Agent.

EXHIBIT G.—*Division money, St. George Island, 1894.*

ST. GEORGE ISLAND, *August 9, 1894.*

Division No. 5: Earnings of natives for fur-seal skins taken since October 20, 1893, to August 7, 1894, both inclusive, 3,062 skins, at 50 cents each.. $1,531.00

First class:	
Lestenkoff, Demetri (chief)	125.44
Lestenkoff, Rev. Innokenty	75.44
Swetzoff, Eustice (second chief)	100.44
Philimonoff, Eoff	75.44
Philimonoff, Simeon	75.44
Philimonoff, Andrean	75.44
Oustegoff, Alexia	75.44
Grokoff, Corneil	75.44
Merculoff, Joseph	75.44
Second class:	
Malavansky, Nicoli	60.35
Rezanzoff, Peter	60.35
Philimonoff, Andronic	60.35
Lekanoff, Stepan	60.35
Oustegoff, Simeon	60.35
Galanin, Parferi	60.35
Lestenkoff, Michael	60.35
Prokopeoff, Peter	60.35
Third class:	
Philimonoff, Gregory	45.27
Merculoff, George	45.27
Kulikuloff, Evan	45.27
Rezanzoff, Innokenty	45.27
Nederazoff, Nicoli	45.27
Fourth class:	
Prokopeoff, Aufanasia	22.63
Merculoff, Evan	22.63
Philimonoff, Innokenty	22.63

ST. GEORGE ISLAND, *August 9, 1894.*

We hereby certify that the foregoing is a true copy of the distribution of the sealing fund on the above-named island, and that the respective amounts set opposite the names herein have been credited to such natives on the pass books of the North American Commercial Company.

JOS. B. CROWLEY,
Special Treasury Agent.
DAN'L WEBSTER,
Agent North American Commercial Company.
D. LESTENKOFF,
Native Chief.

EXHIBIT H.—*Division money, St. Paul Island, 1894.*

Division No. 5: Distribution of community fund derived from the taking of fur-seal skins from October 16, 1893, to August 4, 1894, 12,830 seal skins, at 50 cents		$6,415.00
First class:		
Bourdovokoffsky, Apollon	$164.57	
Buterin, Karp	164.57	
Gromoff, Nicoli	164.57	
Kochooten, Jacob	164.57	
Kozeroff, Stepan	164.57	
Krukoff, Nicoli	164.57	
Kushin, Aggie	164.57	
Mandregin, Neon	164.57	
Melevedov, Anton	164.57	
Nedarazoff, Martin	164.57	
Nedarazoff, Stepan	164.57	
Oustegoff, Peter	164.57	
Pankoff, Parfiri	164 57	
Paranchin, Daniel	164.57	
Rezoff, Nicoli	164.57	
Sedick, Theodore	164.57	
Stepetin, Elary	164.57	
Tervakanoff, Kerrick	164.57	
Tetoff, Peter	164.57	
Volkoff, Markel	164.57	
		3,291.40
Second class:		
Artomanoff, Kerrick	131.65	
Arkashoff, Arseny	131.65	
Bogodanoff, Nicoli	131.65	
Emanoff, George	131.65	
Fratis, John	131.65	
Glotoff, John	131.65	
Haberoff, Paul	131.65	
Kochooten, John	131.65	
Kochooten, Eupheme	131.65	
Galaktioneff, Alex	131.65	
Melevedov, Simeon	131.65	
Melevedov, Alex	131.65	
Seduli, Vassily	131.65	
Shabolin, Necon	131.65	
Stepetin, Dorofay	131.65	
Shaisnakoff, Paul	131.65	
Tetoff, Neon	131.65	
		2,238.05
Third class:		
Hansen, Alexander	105.32	
Koznitzoff, John	105.32	
Merculiff, Alex	105.32	
Nozekoff, Simeon	105.32	
Stepetin, John	105.32	
		526 60
Fourth class:		
Kochergin, George	30.00	
Krukoff, John M	30.00	
Krukoff, John N	30.00	
Krukoff, Maxime	30.00	
Sedick, Philip	30.00	
Shaisnakoff, Valerian	30.00	
Tetoff, Zachar	30.00	
		210 00
Special class:		
Krukoff, Nicoli (first chief)	50.00	
Gromoff, Nicoli (second chief)	50.00	
		100.00
Due John Stepetin from division No. 4		48.95
		6,415.00

DR.

Prime skins accepted, 12,830, at 50 cents	$6,415.00

CR.

Twenty first-class men, at $164.57	3,291.40
Seventeen second-class men, at $131.65	2,238.05
Five third-class men, at $105.32	526.60
Seven fourth-class men, at $30	210.00
Two special class (chiefs), at $50	100.00
One amount due division 4, $48.95	48.95
	6,415.00

ST. PAUL ISLAND, ALASKA, *August 14, 1894.*

We hereby certify the foregoing to be a true copy of the division of the fund derived from taking fur-seal skins on St. Paul Island from October 16, 1893, to August 4, 1894, and that the several amounts opposite the respective names have been credited to said natives on their pass books by the North American Commercial Company.

JOSEPH B. CROWLEY,
Special Treasury Agent.
J. STANLEY BROWN,
Superintendent North American Commercial Company.
NICOLI KRUKOFF,
Native Chief.

REPORT OF JOSEPH B. CROWLEY, SPECIAL TREASURY AGENT, FOR THE YEAR 1895.

OFFICE OF THE SPECIAL AGENT,
TREASURY DEPARTMENT,
Washington, D. C., December 1, 1895.

SIR: I have the honor of submitting my annual report on the seal fisheries of Alaska.

Following your instructions of May 9, I proceeded to San Francisco, Cal., arriving there on the 17th, and on the 20th embarked on the North American Commercial Company's steamer *Lakme*, en route for the seal islands, accompanied by Assistant Special Agent Thomas E. Adams.

We reached St. George Island June 9, where Mr. Adams was placed in charge temporarily, relieving Assistant Special Agent Jacob E. Ziebach during the summer. On the 10th of June I proceeded to St. Paul Island, on board the United States revenue cutter *Perry*, finding Assistant Special Agent James Judge in charge. He was permitted to so remain until September 13, when he was relieved by Special Agent Adams after the return of Special Agent Ziebach to St. George. I found on my arrival at the seal islands the business affairs of the Government intact.

NATIVES.

The native inhabitants had been properly cared for during the winter. Their health was good. The mortality light, as is evidenced by the census reports and the reports of the resident physicians on the islands of St. Paul and St. George, marked Exhibit A.

The order of the Department, that the lessees should erect suitable water closets at the dwelling of each native family on the islands, has been complied with. The villages undergo a thorough cleaning both spring and fall, and the sanitary condition is good.

The lessees have complied with the terms of their contract toward their subjects for support; namely, widows and orphans, and the aged and infirm who are unable to provide for themselves.

School was maintained on each of the islands eight months during the past year, as required by the terms of the lease.

EXPENDITURES.

The sum expended out of the appropriation, $19,500, for the fiscal year ending June 30, 1895, for the support of the natives on the seal islands was as follows:

On St. Paul	$10,930.95
On St. George	3,728.55
Amount paid to the bishop of the Greek Church of Alaska	3,325.00
Total	17,984.50

In addition to this sum there was expended in support of these natives derived from their own earnings, as follows:

On St. Paul:	
Division of sealers' community fund	$6,537.50
Derived from blue foxes	1,025.00
On St. George:	
Division of sealers' community fund	1,408.50
Derived from blue foxes	2,685.00
Cash paid natives by North American Commercial Company for miscellaneous labor	2,000.00
Total	13,656.00

COAL.

There was landed at the islands 370 tons of coal, 290 tons being delivered under special contract, and 80 tons under the terms of the lease. The coal is of fair quality, and sufficient quantity for the comfort of the natives and Government agents in charge of the islands. The same was distributed as follows:

	Tons.
St. Paul Island:	
Government house	10
Use of natives	250
St. George Island:	
Government house	10
Use of natives	100
Total	370

A house was built on each of the islands in which to store the coal for native use, the one on St. Paul Island having a capacity of 300 tons; the one on St. George, 150 tons. The North American Commercial Company furnished under contract all materials, including lumber, hardware, and paint, and superintended the construction of the two buildings, for $790. The natives on the respective islands performed the labor of erecting the same without charge to the Government. The coal is stored in these buildings and it is believed that they will prove a great saving in the future.

FURNITURE FOR GOVERNMENT HOUSES.

The following articles for the furnishing of the Government houses were received:

St. Paul Island:	
One hundred and forty-five yards of carpet	$156.10
Six rugs, to match, at $2.75	16.50
One water pitcher, cup, and tray	5.50
One Franklin stove	16.00
Felt for office desk	1.50
St. George Island:	
One Franklin stove	16.00
Three rugs, at $2.75	8.25
One dust tray, one-half dozen brooms	1.85
Eight window shades	7.00
One toilet set	4.00
One water pitcher, cup, and tray	5.50
Total	238.20

BLUE FOXES.

The past winter was an exceptionally long and severe one at the seal islands. There was more snow fall than usual and the ice remained

attached to the shores much later than common. The result was that food for blue foxes became very scarce and many of them starved to death. Special Agent Ziebach on St. George Island bought food in such quantities as he could procure and fed to the foxes that came to the village in search of food, and in this manner averted the death of many that would have otherwise perished. No foxes were trapped on the islands during the past winter. Orders were given to trap foxes on both islands the coming winter, with the further order to kill all white foxes found. This was done to prevent the intermixture of the two foxes, the pure blue being much more valuable.

Ten pairs of young blue foxes were captured on St. George Island and delivered to Rudolph Neumann of Unalaska, in compliance with the permission granted by the Department to Messrs. Neumann and Applegate. Mr. Applegate having failed to call for or arrange for the payment of his portion of the foxes, the entire number was delivered to Mr. Neumann, who paid for each fox the sum of $5.50, the 50 cents being given to the natives for caring for the foxes from the date of their capture to the date of delivery. The $110 received from Mr. Neumann for the 20 foxes secured by him were placed to the credit of the several natives on their pass books, in amounts corresponding to the number of foxes taken by each.

MARINE GUARDS.

An armed boat's crew in charge of a lieutenant was landed on both the islands about September 1, as an additional guard to prevent raids on the rookeries. They were given quarters in the villages in accordance with Department instructions.

The service rendered by the American fleet in the patrol of Bering Sea, under the command of Capt. C. L. Hooper, was most efficient. I most heartily commend the Revenue Cutter Service as being capable of performing this work, and recommend that they be given charge of this work in the future. Every courtesy was extended to me so that I was enabled to make frequent trips between the islands in the supervision of the business thereon.

SPECIMEN SEALS.

In compliance with your letter of May 16, Mr. Frederick W. True, curator of mammals for the United States National Museum, was permitted to visit the seal islands and remain there throughout the summer, accompanied by an assistant. Every facility was given Mr. True to enable him to investigate the fur seal, and to study seal life on and about the islands. He was permitted to take fifteen specimen seals for official Government purposes.

Dr. Sharp, of Philadelphia, was permitted to take two specimen seals for a like purpose.

Hon. James Sheakley, governor of Alaska, on his tour of western Alaska, visited the seal islands in July, in order to personally acquaint himself with the true condition of the seal herd.

C. H. Townsend, of the United States Fish Commission, visited the islands during the summer for the purpose of observing, photographing, and making charts of the rookeries.

Capt. F. J. Drake, of the United States Fish Commission steamer *Albatross*, spent two weeks on the islands taking observations and making a plane table survey of the rookeries.

SEALS.

The sealing season began on the 13th of June, after my arrival at the islands. Very few bachelor seals hauled out until about the 20th of June. The breeding bulls arrived early in May. The remainder of the herd was full three weeks later in arriving than in former years. This is accounted for by the fact that the floe ice remained about the islands, extending for miles out at sea, until after the middle of June. Soon after its disappearance the bachelor seals hauled out in goodly numbers. The cow herd came later and apparently all at once. The harems were rapidly formed and the pups were born very soon after the arrival of the cows.

From August 10, 1894, to June 8, 1895, inclusive, 1,269 seals were taken on St. Paul Island for native food, and from October 20, 1894, to June 3, 1895, inclusive, 196 seals were taken on St. George Island for a like purpose. During the past season, closing August 1, 11,231 seals were taken on St. Paul by the lessees and 2,315 on St. George, making a total of 15,011 fur-seal skins in the salt houses.

The skins taken from seals killed for native food in the fall were taken under the quota allotted for 1894, and remained in the salt houses throughout the winter. Blue foxes broke into the salt house at St. George in search of food, and damaged 11 of these skins, rendering them unfit for market. These damaged skins were shipped to the collector of customs at San Francisco, Cal., as per instructions.

Statements showing the number of seals taken, date of killing, and rookery from which the same were taken, are marked Exhibit B.

Summary of skins taken.

On St. Paul Island:	
For native food	1,269
By lessees	11,231
On St. George Island:	
For native food	196
By lessees	2,315
Total	15,011
Damaged by blue foxes	11
Skins accepted by lessees	15,000

The 15,000 fur-seal skins were shipped from the islands on the steamer *Bertha*, consigned to the North American Commercial Company, at San Francisco. Receipts for the same are marked Exhibit C.

Distribution of community fund.

St. Paul Island:	
To 12,000 seal skins, at 50 cents	$6,250.00
To 140 seal skins, rejected in 1894, subsequently accepted, but not included in Division No. 5	70.00
	6,320.00
By 22 first-class men, at $164.38	3,616.36
By 15 second-class men, at $131.52	1,972.80
By 4 third-class men, at $105.21	420.84
By 7 fourth-class men, at $30	210.00
By first chief, $50; and second chief, $50	100.00
	6,320.00

St. George Island:

To 2,500 seal skins, at 50 cents	$1,250.00
By 7 first-class men, at $67.91	475.37
By 8 second-class men, at $54.32	434.56
By 6 third-class men, at $40.75	244.50
By 1 fourth-class man, at $20.75	20.75
By salaries to first and second chief	75.00
	1,250.00

For detailed statement of distribution of the community fund, with certificate attached, see Exhibit D.

QUOTA NOT DIFFICULT TO OBTAIN.

It was not found specially difficult to obtain the maximum quota, 15,000 seals, at the islands this season. It need not be taken for granted, however, that a like number can be as easily taken the coming year or at any time in the future under the present regulations governing pelagic sealing. It will be remembered that pending the modus vivendi no seals were taken in Bering Sea, and only 7,500 male seals were killed on the islands. A cow could then go to sea for food in safety, and return to the rookery to suckle her young. Thus the pups born in 1891, 1892, and 1893 were properly nurtured during their infancy, and did not die of starvation on account of their mothers having been killed at sea. The male portion of them came of killable age last year and this. Fully 50 per cent of the seals driven to the killing grounds this season were of killable size. This exceptionally large percentage is accounted for in no other way except in that just given.

NEW KILLING GROUNDS.

A new killing ground was established for Halfway Point, at the first lake, one-half mile south of the rookery. The killing ground established for English Bay, Tolstoi, and Middle Hill is at a small lake near Telegraph Hill, not to exceed a mile from either rookery. Since the establishment of these killing grounds there is not a drive on St. Paul Island to exceed a mile in length.

OVERDRIVING.

The natives are accompanied on almost every drive by one of the assistant agents in charge of the islands or myself, and absolute caution is taken in every instance to avoid overdriving. If seals be given their time, they can be driven a mile, or even two, in the cool hours of nighttime with but slight fatigue. It has been contended that many seals die by reason of being turned back into the sea from the killing ground immediately after the drive, while in a heated condition. This is an erroneous idea. Evidence to the contrary appears at every drive made.

Two drives were made from Middle Hill and Tolstoi, and as many as 1,000 to 1,500 seals were turned back from each of these killings and driven directly into the lagoon. A very large proportion of them remained in this water as long as ten days before returning to the rookeries. They were watched constantly, and not a single seal was found dead in these waters or along its shores as a result. At nearly every killing of seals from the Reef, Zapadnie, Halfway, and Northeast Point rookeries, a large proportion of the seals turned back went directly from the killing ground to the rookery from which they were driven, without going into the water, and took up their places there as though they had never been disturbed.

PELAGIC SEALING.

The result of pelagic sealing in Bering Sea the past two years already shows a marked decrease in the breeding seals on the rookeries. There were fewer cows in the harems, and on several of the rookeries there were "breaks" or "spaces" wholly unoccupied that had never appeared before. It is evident that the cow herd can not long withstand the onslaught of pelagic sealing in Bering Sea. It was believed, when double the number of sealing vessels came into the sea August 1 than were there last year, that double the number of seals would be taken. But not so. Nor was it the fault of the sealer. It was the scarcity of seals. They were not there in sufficient numbers to be taken, although the tragedy of last year was reenacted.

At the time of my leaving the islands, dead and dying pups were to be found on every hand. During the month of October, 22,054 dead seal pups were counted on the rookeries on the island of St. Paul and 6,012 on St. George. They were distributed in proportion to the number of breeding seals on the several rookeries, thus showing conclusively that their death was produced by starvation, and not by an epidemic on any special rookery.

The breeding-seal herd has been reduced to such proportion that they can now be counted with comparative accuracy. I made the count as follows:

St. Paul Island:	
Breeding cows	78,696
Bulls	4,372
St. George Island:	
Breeding cows	21,240
Bulls	1,180

Capt. F. J. Drake, of the United States Fish Commission steamer *Albatross*, also made a count of the breeding seals on the islands at the time of making his plane-table survey of the rookeries, and it is probable that by the aid of the survey he may be able to give a more accurate count of the number than I can. But I am certain that if I err it is in overstating and not understating the actual number.

EXCESS OF MALE LIFE.

There is a surplus of available bulls on the islands. As the cow herd decreases the bulls increase. There is now a large per cent of male life that is a detriment rather than a benefit to the breeding grounds. Nearly 50 per cent of the bulls of breeding age were unable to procure a single cow with which to start a harem. A large number of bulls had from one to four only in their harems.

The idle bulls loiter about the boundaries of the breeding rookeries, intercepting the cows as they come and go to feed, keeping up a constant warfare. The cows are thus annoyed and harassed throughout the season, when they should be permitted to rest and care for their young. Every cow that leaves the island is pursued by one or more of these big, strong, young bulls. How far this pursuit is kept up can not be determined. It is believed by some that this is the cause of the cows going so far out at sea before stopping to procure food, and it seems plausible enough.

If regulations can not be made at once to prohibit pelagic sealing in Bering Sea, there is but one remedy left, that of taking such number of seals on the islands as to reduce the herd to such proportions as will make the business of sealing at sea unprofitable.

The large number of schooners now engaged in that business will be compelled to seek other employment. The business once stopped, the

taking of seals on the islands could be abated and the herd permitted to rest and recuperate. I most earnestly urge that this course be taken without unnecessary delay.

The social and business relations existing between the agents of the company and the Government at the islands the past year have been most pleasant.

Respectfully, yours, JOS. B. CROWLEY,
Special Treasury Agent in Charge of the Fur Seal Islands, Alaska.

Hon. JOHN G. CARLISLE,
Secretary of the Treasury, Washington, D. C.

OFFICE OF SPECIAL AGENT, TREASURY DEPARTMENT,
St. George Island, Alaska, October 10, 1895.

MY DEAR SIR: On October 2 and 8 I made a careful count of the dead fur-seal pups on the several rookeries on St. George Island and found the following number:

Zapadnie rookery	2,083
North rookery	1,559
Starry Arteel rookery	1,131
East rookery	986
Little East rookery	253
Total	6,012

The count was made systematically and its correctness can be absolutely depended upon. The number represents only the actual dead bodies and indisputable remains of others that foxes and the elements had more or less destroyed. All trace of those that died during the fore part of August had been washed away. On all the rookeries were seen a great many seal pups that were very emaciated, and it was only a question of a few days before they too would die of starvation. Some were so thin and weak that they did not have the strength to move, while along the outskirts of the herd—as we drove the seals slowly to one side of the rookeries—were hundreds of weaklings that could scarcely keep up with the balance of the herd. A great proportion, if not all of them, will die. In no case was it necessary to drive the seals over 200 yards to enable a count to be made. For three weeks previous to making the count I made frequent visits to and examinations of the rookeries, and on all could see the carcasses of seal pups on all parts, and numerous among the live seals would be seen the emaciated forms of others slowly dying from starvation. Of course it was impossible to make a count of the weaklings, but my judgment would say that on the five rookeries on St. George Island not less than 800 will die for want of sustenance between the 10th and 31st of October.

There is but one reason for this deplorable and even criminal destruction of young seal life, and that is the killing in Bering Sea of the females that gave them birth and on whom they are dependent for sustenance until they are old enough to maintain themselves, which is in three or a little over three months; and just so long as sealing in Bering Sea is permitted under the present regulations, just so long will this destructive waste of fur-seal life continue. Sealing vessels commence the work of exterminating the seal herd in Bering Sea on August 1, and in two weeks after you can see the rookeries dotted all over with dead pups, and the number keeps increasing day by day until a great proportion of the number born die from starvation, their mothers having been killed at sea, where they had gone for food, by the sealers. It is an established fact that the male seal, with but few exceptions, goes but a short distance for food during the season the seals are on the island, while the female travels far outside the limit for food and rest, and is then killed in great numbers by the sealers. Something could be gained by the extension of the 60-mile limit to 110 or 125 miles, but a more desirable and practical measure of protection to the young and female seal life would be the addition of the months of August and September to the closed season in Bering Sea. The last suggestion would prolong the fur-seal life a few years, but nothing of a temporary or restrictive nature will be of an established benefit to the continuation and rehabilitation of the seal herd but the absolute prohibition of killing fur seal in open water. The two years of sealing in Bering Sea has been terribly destructive of seal life, and if it is continued two or three years longer the fur-seal herd on the Pribilof Islands will be practically exterminated.

Respectfully, yours, JACOB E. ZIEBACH,
Treasury Agent in Charge of St. George Island.

Hon. JOSEPH B. CROWLEY,
Special Treasury Agent for the Seal Fisheries of Alaska, Robinson, Ill.

Count of dead seals, St. Paul Island, Alaska.

Date.	Rookery.	Pups.	Cows.	Bulls.	Total.
1895.					
Sept. 23	Ketavie	854	7	.....	861
23	Lukannon	1,347	8	.....	1,355
28	Lagoon	300	2	1	303
Oct. 6	Polavina	1,970	2	.....	1,972
6	Garbotch	1,514	7	2	1,523
8	Zapadnie	5,231	15	3	5,249
8	English Bay	381	2	1	384
8	Tolstoi	2,582	8	1	2,591
8	Reef	3,376	25	8	3,409
2	Sea Lion Rock	361	.....	.....	361
10	Northeast Point	4,017	25	4	4,046
	Total	21,933	101	20	22,054

The above table shows the number of dead seal pups, cows, and bulls found upon the rookeries of St. Paul Island, Alaska, and actually counted between the dates of September 23, 1895, and October 10, 1895.

THOS. E. ADAMS,
Special Agent, Treasury Department.

EXHIBIT A.

Census of St. Paul Island, Alaska, June 30, 1895.

Name and relationship.	Place of birth.	Age.	Remarks.
Family 1—4 individuals:			
Artomonoff, Kerrick, husband	Northeast Point	68	
Artomonoff, Alexandra, wife	St. Michaels	42	
Ivanoff, Ardokia, sister-in-law	do	21	
Prokopief, Auxenia, daughter	St. Paul	27	Widow.
Family 2—3 individuals:			
Arkashoff, Arseny, husband	do	28	
Arkashoff, Mariana, wife	Atka	35	
Stepetin, John, stepson	Unalaska	17	
Family 3—3 individuals:			
Bogodanoff, Nicoli, husband	St. George	23	
Bogodanoff, Oulita, wife	do	28	
Bogodanoff, Mary, sister	do	20	
Family 4—4 individuals:			
Bourdukoffsky, Apollon, husband	Unalaska	41	
Bourdukoffsky, Chionia, wife	St. Paul	34	
Bourdukoffsky, Peter, son	do	15	
Bourdukoffsky, Oulita, daughter	do	10	
Family 5—6 individuals:			
Buterin, Karp, husband	St. Paul	41	
Buterin, Parascovia, wife	Unalaska	39	
Sedick, Constantine, stepson	St. Paul	7	
Sedick, Zahar, orphan	do	9	
Mezeekin, Mary, niece	do	22	
Mezeekin, Vassa	do	a 2½	Daughter of Mary.
Family 6—5 individuals:			
Emanoff, George, husband	do	27	
Emanoff, Catherine, wife	do	21	
Emanoff, Mary, daughter	do	3	
Emanoff, John, son	do	1	
Koznitzoff, John, nephew	do	18	
Family 7—5 individuals:			
Fratis, John, husband	Ladrone Islands	49	
Fratis, Ankolina, wife	Unalaska	21	
Fratis, John, son	St. Paul	8	
Fratis, Simeon, son	do	1	
Fratis, Argrafina, daughter	do	2	
Family 8—3 individuals:			
Glotoff, John, husband	St. Paul	27	
Glotoff, Avdotia, wife	do	20	
Glotoff, Mary, mother	do	67	
Family 9—3 individuals:			
Gromoff, Nicoli, husband	Attu	27	
Gromoff, Oulrana, wife	St. Paul	25	
Sedick, Elizabeth	do	6	Clothes furnished by company.

a Months.

Census of St. Paul Island, Alaska, June 30, 1895—Continued.

Name and relationship.	Place of birth.	Age.	Remarks.
Family 10—4 individuals:			
Galaxtioneff, Alexander, husband	Atka	23	
Galaxtioneff, Martha, wife	Unalaska	34	
Vicolof, Claudia, half-sister	St. George	15	Clothes furnished by company.
Vicolof, Alexandra	St. Paul	a 2	Daughter of Claudia.
Family 11—3 individuals:			
Hanson, Alexander, husband	Sitka	37	
Hanson, Lukina, wife	St. Paul	18	
Kusbin, Nestor, stepson	do	2	
Family 12—3 individuals:			
Haberoff, Paul, husband	Kadiak	43	
Haberoff, Agrafina, wife	Unalaska	53	
Shabolin, Agrafina, adopted daughter	St. Paul	6	
Family 13—3 individuals:			
Kochooten, John, husband	do	24	
Kochooten, Tatiana, wife	Unalaska	20	
Kochooten, Mark, son	St. Paul	a 8	
Family 14—7 individuals:			
Kochooten, Jake, husband	do	43	
Kochooten, Feoronia, wife	Unga	40	
Kochooten, Oulita, daughter	St. Paul	19	
Kochooten, Ellen, daughter	do	10	
Kochooten, Theodore, son	do	6	
Kochooten, Larion, son	do	2	
Lodoshnikoff, Matalia, stepdaughter	Unga	15	
Family 15—3 individuals:			
Kochooten, Eupheme, husband	St. Paul	51	
Kochooten, Pelogia, wife	Unalaska	44	
Kochooten, Trefon, nephew	St. Paul	8	
Family 16—4 individuals:			
Kochergin, George, son	do	17	Provisions furnished by Government. Clothing for widow and daughters furnished by company.
Tetoff, Feclusia, widowed mother	Kurile Islands	37	
Tetoff, Irene, sister	St. Paul	9	
Tetoff, Sophia, sister	do	7	
Family 17—4 individuals:			
Kozeroff, Stepan, husband	Unalaska	42	
Kozeroff, Anastasia, wife	do	43	
Kozeroff, Ionally, son	St. Paul	5	
Kozeroff, Alexandra, daughter	do	2	
Family 18—4 individuals:			
Krukoff, Nicoli, husband	Sitka	44	
Krukoff, Catherine, wife	Atka	34	
Krukoff, Metrofan, son	St. Paul	10	
Krukoff, Oustmia, daughter	do	4	
Family 19—4 individuals:			
Krukoff, Maxime, husband	Sitka	38	This family is supported by the company. John M. draws clothing on Government orders.
Krukoff, Feoctesta, wife	St. Paul	29	
Krukoff, John M., son	do	13	
Krukoff, Condrat			
Family 20—4 individuals:			
Mandrigan, Neon, father	St. George	37	
Mandrigan, Mary, daughter	St. Paul	10	
Mandrigan, Zoe, daughter	do	8	
Mandrigan, Innokenty, son	do	4	
Family 21—4 individuals:			
Merculiff, Alexandra, husband	St. Paul	19	
Merculiff, Agafia, wife	do	18	
Merculiff, Paul, son	do	1	
Merculiff, Paul, brother	do	5	
Family 22—5 individuals:			
Melividov, Anton, father	Kodiak	39	
Melividov, Alexandra, daughter	St. Paul	13	
Melividov, Olga, daughter	do	9	
Melividov, Mary, daughter	do	7	
Melividov, Alexandra, mother	California	60	
Family 23—3 individuals:			
Melividov, Alexander, husband	St. Paul	20	
Melividov, Salome, wife	do	20	
Melividov, Anton, son	do	1½	
Family 24—4 individuals:			
Melividov, Simeon, husband	Sitka	27	
Melividov, Alexandra, wife	Akootan	27	
Melividov, Margret, daughter	St. Paul	3	
Melividov, Christopher, son	do	1	
Family 25—5 individuals:			
Nederazoff, Stepan, husband	St. Paul	37	
Nederazoff, Alexandra, wife	Attu	31	
Nederazoff, Mary, niece	St. Paul	11	
Nederazoff, Mary	do	2	Clothes furnished by company.
Hopoff, Neketa	do	4	Do.

a Months.

Census of St. Paul Island, Alaska, June 30, 1895—Continued.

Name and relationship.	Place of birth.	Age.	Remarks.
Family 26—4 individuals:			
Nederazoff, Martin, husband	St. Paul	40	
Nederazoff, Catherine, wife	Sitka	37	
Shane, Mary, stepdaughter	St. George	15	
Shane, Parascovia, stepdaughter	do	8	
Family 27—2 individuals:			
Nozekoff, Simeon, husband	Unalaska	18	
Nozekoff, Anastasia, wife	St. Paul	18	
Family 28—4 individuals:			
Oustigoff, Peter, husband	St. George	31	
Oustigoff, Parascovia, wife	St. Paul	27	
Oustigoff, Niel, son	do	4	
Oustigoff, Stepanida, mother	St. George	60	
Family 29—5 individuals:			
Pankoff, Parferie, husband	St. Paul	32	
Pankoff, Olga, wife	St. George	32	
Pankoff, Blasa, son	St. Paul	6	
Pankoff, Varvara, daughter	do	3	
Shaisnekoff, George	do	12	Clothing furnished by company.
Family 30—2 individuals:			
Paranchin, Daniel, husband	St. Paul	36	
Paranchin, Alexandra, wife	Unalaska	33	
Family 31—5 individuals:			
Reseff, Rev. Nicoli, husband	Sitka	66	
Reseff, Matrona, wife	do	60	
Reseff, Olga, daughter	Kodiak	23	
Ignatief, Anna, orphan	Barka	16	Adopted daughter.
Gilliof, Mary, orphan	Atka	17	Do.
Family 32—7 individuals:			
Sedick, Theodore, husband	St. Paul	47	
Sedick, Martha, wife	Unalaska	40	
Sedick, Mary, daughter	St. Paul	7	
Sedick, Oustmia, daughter	do	6	
Sedick, Matrona, daughter	do	4	
Sedick, Innokenty, son	do	9	
Sedick, Philip, nephew	do	16	
Family 33—4 individuals:			
Seduli, Vassili, husband	Kodiak	52	
Seduli, Elizabeth, wife	Unalaska	54	
Seduli, Vera, daughter	St. Paul	14	
Mezeeken, Ivan, adopted son	do	4	
Family 34—3 individuals:			
Shabolin, Necon, husband	St. Paul	28	
Shabolin, Feocla, wife	St. George	25	
Shabolin, Apollenaria, daughter	St. Paul	1	
Family 35—2 individuals:			
Shaisnekoff, Paul, uncle	St. Paul	59	
Shaisnekoff, Valerian, nephew	do	15	
Family 36—4 individuals:			
Stepeton, Elary, husband	St. Paul	31	
Stepeton, Anna, wife	Unalaska	24	
Stepeton, Ouliana, daughter	St. Paul	5	
Stepeton, Paola, daughter	do	2½	
Family 37—3 individuals:			
Stepeton, Dorafay, husband	St. Paul	24	
Stepeton, Vassa, wife	St. George	21	
Stepeton, Vassili, son	St. Paul	2	
Family 38—5 individuals:			
Terrakanoff, Kerrick, husband	St. Paul	41	
Terrakanoff, Anna, wife	Sitka	35	
Nederazoff, Agrafina, niece	St. Paul	26	Clothing furnished by company.
Nederazoff, Alesie	do	5	Son of Agrafina.
Shane, Elefery	do	5	
Family 39—4 individuals:			
Tetoff, Neon, husband	St. Paul	25	
Tetoff, Agrafina, wife	Unalaska	20	
Tetoff, Simeon, son	St. Paul	1½	
Tetoff, Zahar, brother	do	15	
Family 40—3 individuals:			
Tetoff, Peter, husband	St. Paul	30	
Tetoff, Neacy, wife	St. George	34	
Tetoff, Alexandra, sister	St. Paul	16	
Family 41—5 individuals:			
Volkoff, Markel, husband	Atka	50	
Volkoff, Alexandra, wife	Unalaska	41	
Volkoff, Techon, son	St. Paul	2½	
Volkoff, Arifa, son	do	1½	
Merculiff, John, son	do	10	Clothing furnished by company.
Family 42—4 individuals:			
Balakshin, Matrona, widow	Unalaska	45	
Shaposhnikoff, Parascovia	St. Paul	28	
Rookovishnikoff, Anna, orphan	*do*	10	
Rookovishnikoff, Stepan, orphan	*do*	13	

Census of St. Paul Island, Alaska, June 30, 1895—Continued.

Name and relationship.	Place of birth.	Age.	Remarks.
Family 43—1 individual:			
Bellaglazoff, Ellen, widow	St. Paul	59	
Family 44—3 individuals:			
Koshovnikoff, Avdotia, widow	St. Paul	34	
Koshovnikoff, Paul, son	do	11	
Merculiff, Martin, nephew	do	12	
Family 45—6 individuals:			
Kozloff, Parascovia, widow	Unalaska	36	
Kozloff, Michael, son	St. Paul	8	
Kozloff, Nicoli, son	do	6	
Kozloff, Anton, son	do	1½	
Serebunkoff, Olga, sister	do	30	
Serebunkoff, Repsimmia	do	2½	Daughter of Olga's.
Family 46—2 individuals:			
Krukoff, Anna, widow	St. Paul	29	
Kozeroff, Sundulee, adopted daughter	do	4	
Family 47—2 individuals:			
Krukoff, Natalia, widow	St. Paul	41	
Krukoff, John N., son	do	14	Draws clothes on Government orders.
Family 48—4 individuals:			
Popoff, Avdotia, widow	Atka	35	
Popoff, Avrasmia, daughter	St. Paul	5	
Popoff, Alexander, daughter	do	a 2	
Balakshin, Anna, daughter	do	10	
Family 49—2 individuals:			
Popoff, Avanasia, widow	St. Paul	49	
Shutzagan, Daria, orphan	do	14	
Family 50—1 ind vidual:			
Peeshnikoff, Vassiliay, widow	do	35	
Family 51—2 individuals:			
Rookovishnekoff, Anesia, widow	Unalaska	29	
Rookovishnekoff, Parascovia, daughter.	St. Paul	5	
Family 52—1 individual:			
Rezanzoff, Anna, widow	St. Michaels	61	
Family 53—3 individuals:			
Sedick, Daria, widow	Unalaska	51	
Kochooten, Ellen, daughter	St. Paul	31	
Kochooten, Zenofia, daughter	do	26	
Family 54—2 individuals:			
Terrentova, Anna, widow	do	75	
Terrentova, Anna, daughter	do	42	
Family 55—2 individuals:			
Volkoff, Ellen, aunt	St. Paul	41	
Kushin, Mavra, niece	do	14	
Family 56—2 individuals:			
Kushin, Mary, grass widow	St. George	39	Husband at Unalaska.
Kushin, Michael, son	St. Paul	10	

ORPHAN GIRLS AT SCHOOL IN UNALASKA BELONGING TO ST. PAUL ISLAND.

Sedick, Avdotia	St. Paul	14	
Krukoff, Lukeria	Unalaska	18	
Koznitzoff, Agafia	St. Paul	17	
Merculiff, Leiboff	do	19	
Ivanoff, Anastasia	do	17	
Zakaroff, Feodosia	do	16	
Zatzmanoff, Auxenia	do	14	
Fratis, Ellen	do	13	Daughter of John Fratis.

a Months.

RECAPITULATION.

Families	56
Resident inhabitants	199
Nonresident inhabitants	8
Total native population	207
Female inhabitants	120
Male inhabitants	87
Females in excess of males	33
Inhabitants born outside of seal islands	51
Male adults	43
Males between 5 and 17 years	26
Males under 5 years	18
	87
Female adults	72
Females between 5 and 17 years	33
Females under 5 years	15
	120
Marriages	2
Births	6
Deaths	2
Departures from Island	1
Net increase in population from June 30, 1894, to June 30, 1895	3

Census of St. George Island, Alaska, June 30, 1895.

Name and relationship.	Age.
Family 1—3 individuals:	
Galanin, Parfire, husband	22
Galanin, Euphronia, wife	17
Galanin, Elexia, son	*a* 3
Family 2—3 individuals:	
Gorokoff, Corniel, husband	39
Gorokoff, Katherine, wife	40
Galanin, Alexander, adopted son	8
Family 3—2 individuals:	
Kulikuloff, Evan, widower	49
Zacharoff, Emanuel, adopted son	14
Family 4—3 individuals:	
Lestnikoff, Demitri, widower	31
Lestnikoff, Anna, daughter	7
Merculiff, Mark, adopted son	9
Family 5—4 individuals:	
Lestnikoff, Michael, bachelor	22
Lestnikoff, Elizebeth, mother	60
Lestnikoff, Mary, sister	25
Lestnikoff, Sarah, sister	18
Family 6—6 individuals:	
Lekanoff, Stepan, husband	26
Lekanoff, Pelegia, wife	26
Lekanoff, Anatole, son	4
Lekanoff, Sergius, son	3
Lekanoff, Sarah, daughter	1
Lekanoff, Mariana, daughter	*a* 3
Family 7—6 individuals:	
Merculiff, Evan, bachelor	18
Merculiff, Vasalisa, mother	43
Merculiff, Avdotia, sister	11
Merculiff, Elexandra, sister	10
Merculiff, Nicoli, brother	13
Merculiff, Helena, sister	8
Family 8—6 individuals:	
Merculiff, Joseph, bachelor	23
Merculiff, Euphronia, mother	41
Merculiff, George, brother	21
Merculiff, Helena, sister	10
Merculiff, Evan, brother	5
Merculiff, Marfa, sister	2
Family 9—5 individuals:	
Malavansky, Nicoli, bachelor	30
Malavansky, Repsimia, sister	35
Malavansky, Stepenida, niece	16
Malavansky, Peter, nephew	7
Malavansky, Vassa, sister	20
Family 10—4 individuals:	
Nederazoff, Nicoli, bachelor	17
Nederazoff, Evgenia, mother	41
Nederazoff, Melania, sister	21
Nederazoff, Isadore, brother	4
Family 11—4 individuals:	
Oustigoff, Elexia, husband	45
Oustigoff, Marfa, wife	25
Oustigoff, Alexandra, daughter	2
Oustigoff, Stepineda, daughter	*a* 6
Family 12—3 individuals:	
Oustigoff, Simoen, husband	31
Oustigoff, Mary, wife	18
Oustigoff, Anfesa, daughter	*a* 3
Family 13—6 individuals:	
Philomanoff, Eoff, husband	50
Philomanoff, Ulita, wife	33
Philomanoff, Gregoire, son	22
Philomanoff, Afgania, daughter	21
Philomanoff, Demitri, son	8
Oustigoff, Susanna, adopted daughter	8
Family 14—6 individuals:	
Philomanoff, Simoen, husband	45
Philomanoff, Avdotia, wife	22
Philomanoff, Innokenty, sont	20
Philomanoff, Fedosia, daugther	13
Philomanoff, Zoya, daughter	3
Philomanoff, Joseph, son	1
Family 15—2 individuals:	
Prokapieff, Peter, husband	30
Prokapieff, Stepenida, wife	18
Family 16—5 individuals:	
Philomanoff, Andronic, husband	28
Philomanoff, Zenobia, wife	30
Philomanoff, Marian, daughter	5
Philomanoff, Mary, daughter	2
Philomanoff, Leonti, son	1
Family 17—3 individuals:	
Rezanzoff, Innokenty, bachelor	17
Rezanzoff, Fedosia, mother	51
Rezanzoff, Serephina, sister	7
Family 18—3 individuals:	
Rezanzoff, Peter, husband	49
Rezanzoff, Matrona, wife	53
Rezanzoff, Fatiama, daughter	11
Family 19—3 individuals:	
Swetzoff, Eustin, husband	44
Swetzoff, Christine, wife	37
Swetzoff, George, son	9
Family 20—2 individuals:	
Galanin, Okalina, widow	32
Galanin, Evan, son	13
Family 21—3 individuals:	
Philomanoff, Parascova, widow	31
Philomanoff, Pelegia, daughter	5
Philomanoff, Fecla, daughter	*a* 6
Family 22—4 individuals:	
Shane, Riessa, widow	43
Shane, Uleta, daughter	26
Shane, Michael, son	7
Merculiff, Stepan, nephew	4
Family 23—2 individuals:	
Swetzoff, Polexania, widow	35
Swetzoff, Paul, son	3

a Months.

RECAPITULATION.

Families	23
Individuals	88
Males	40
Females	48
Males between 6 and 16 years	9
Males under 6 years	9
Males over 16 years	22
	40
Females between 6 and 16 years	9
Females under 6 years	11
Females over 16 years	28
	48
Sealers and families, supported by the Government	76
Widows and orphans, supported by company	12
	88

Report of the resident physician.

ST. PAUL ISLAND, *June, 1, 1895.*

DEAR SIR: The resident physician respectfully submits the following report on the public health of St. Paul Island during the year ending June 1, 1895:

Two epidemics have visited the island. The first in October, of influenza; the other, varicella, occurred in March, 1895. An endemic, gastro-enteric in type, broke out in the latter part of February, immediately after the opening of the winter seal-meat cache. This meat had been piled up on the ground before being thoroughly cooled, and the layers lowest became tainted.

There were 30 cases of influenza severe enough to make note of, 8 cases of pneumonia, 5 cases of pleurisy, and 3 cases of phthisis pulmonalis.

Acute bronchitis has been very common. Hæmophthesis has, as in previous years, been frequent. Of the eye, conjunctivitis and iritis have been most common; of the ear, otitis media of the throat, tonsilitis, and pharyngitis. One case of cellulitis requiring surgical interference occurred in Sanko Melevedov from exposure on the last killing field last year. Five severe cases of icterus occurred.

In the surgical line there has been done the following: Operation on Axanosia Popoff, for suppurative synovitis of the left knee, December 21, 1895; good recovery.

Operation on Mrs. Elory Stepetin, for osteosarcoma of the antrum, December 29, 1894. Incision made over the tumor and diseased bone, and neoplastic tissue removed to the posterior vault of the pharynx; part of the floor of the orbit removed; eyeball intact; good recovery; no return as yet.

Fracture of the radius: Mrs. Nikoli Krukof. Circumcision for paraphimosis. Two cases requiring surgical aid. Dislocation of the lower jaw.

A number of cases of minor surgery, scalp wounds, etc., occurred, but none severe enough to require special mention. Sixty-seven teeth were extracted.

Since November, 1894, there have been 993 prescriptions given out. This does not include simple requests for salts, etc., but represents closely the number of cases of sickness requiring examination and diagnosis which have occurred during that time.

Two deaths have occurred. First. The daughter of Theo Sedic, age 11 months. The child had an attack of influenza early in October, but made a good recovery. I was notified of its last illness. It died, as far as I can learn, while undergoing the native process of manipulation, by Ellen Voekof. Second. Mrs. Neon Mandregin, cause, acute phthisis.

The births were 6 in number: To Agrafia Merculif, a son, July 4, 1894; Alexandria Melevedov, a son, August 11, 1894; Fatiana Koochooten, a son, November 4, 1894; Mary Messekin, a daughter, February 10, 1895; Evdotia Popoff, a daughter, April 24, 1895, and Claudia Vikoulof, a daughter, May 3, 1895. Increase in population, 4.

At the bottom of by far the majority of troubles among the natives is that vague constitutional condition known as the stromous diaothesis or scrofula. It shows itself chiefly in a general lack of the phosphates and mineral salts in the native physiological economy.

Little can be accomplished in the way of remedying this condition by the various medicinal sirups or emulsions until they can be induced to adopt a diet which will furnish the regular daily demand of nature for those essential constituents of the body.

To this end I would suggest that the next year's food supply contain a larger percentage of those foods rich in phosphates and easily convertible hydrocarbons, as for example, of fats, lard, buttermilk, sweet oil, and of foods containing phosphates and earthy salts, oatmeal, graham flour, cracked wheat, graham crackers, etc. It would also be advantageous if the Government agent would encourage the raising of such vegetables as will grow here, such as turnips, radishes, lettuce, etc.

One of the most serious obstacles in the way of attempts to improve the physical condition of the people is the fact that most of them are such inferior cooks.

Since March 7, 1895, the resident physician has taken the obstetrical work in his own hands. On that day, Mrs. Julia Resef gave birth to a dead child under such circumstances that he felt it a matter of necessity to put a stop if possible to the further ministrations of the native midwife, Ellen Volkof. A communication was sent to the Government agent, who took immediate steps to that effect.

The village has been cleaned and disinfectant thrown in the garbage holes.

In concluding, the resident physician would like to acknowledge the hearty support, both moral and material, given him by the United States Government agent, Mr. Judge, in every attempt to better the public hygiene.

Very respectfully,

GARDNER PERRY POND, M. D

Mr. J. STANLEY-BROWN,
Superintendent North American Commercial Company.

EXHIBIT B.

Annual statement of fur seals killed on St. Paul Island, Alaska, during the year ended August 1, 1895.

Date.	Rookery.	Number of seals killed for natives' food.		Number of seals killed by lessees for skins.	Aggregate.	
		Large young seals.	Skins accepted by lessees.	Accepted (prime).	Skins accepted.	Total number of seals killed.
1894.						
Aug. 10	Watchmen to date	24	24			24
Nov. 6	Middle Hill	132	132			132
17	Watchmen to date	12	12			12
21	Reef	147	147			147
24	Watchmen Northeast Point	1	1			1
25	Tolstoi and Reef	87	87			87
25	Watchmen Half Way Point	2	2			2
25	Watchmen Southwest Bay	3	3			3
28	Tolstoi and Reef	218	218			218
Dec. 1	Watchmen Northeast Point	2	2			2
4	Tolstoi, Lukannon, Garbotch, and Reef	474	474			474
1895.						
May 27	Watchmen Northeast Point	6	6			6
28	Reef	79	79			79
June 1	Watchmen Northeast Point	3	3			3
4	Reef	76	76			76
8	Watchmen Northeast Point	3	3			3
13	Tolstoi			184	184	184
16	Watchmen Northeast Point			2	2	2
20	Northeast Point			1,961	1,961	1,961
24	Reef			1,548	1,548	1,548
26	Half Way Point			575	575	575
July 1	English Bay			751	751	751
2	Zapadnie			861	861	861
3	Lukannon			364	364	364
9	Northeast Point			960	960	960
10	do			431	431	431
15	Reef			1,138	1,138	1,138
17	Half Way Point			324	324	324
19	Zapadnie			834	834	834
22	Northeast Point			827	827	827
27	Lukannon			286	286	286
Aug. 1	Reef	185	185			185
	Total	1,454	1,454	11,046	11,046	12,500

Annual statement of fur seals killed on St. George Island, Alaska, during the year ended July 31, 1895.

Date.	Rookery.	Number of seals killed for natives' food.		Number of seals killed by lessees for skins.	Aggregate.	
		Large young seals.	Skins accepted by lessees.	Accepted (prime).	Skins accepted.	Total number of seals killed.
1894.						
Oct. 20	North	58	58	.....	58	58
23	Zapadnie (killed by guards)	3	3	.....	3	3
26	East	19	19	.....	19	19
29	North	3	3	.....	3	3
30	Zapadnie (killed by guards)	3	3	.....	3	3
Nov. 2	.....do	14	14	.....	14	14
6	North	35	35	.....	35	35
6	Zapadnie (killed by guards)	3	3	.....	3	3
13	.....do	3	3	.....	3	3
20	.....do	1	1	.....	1	1
Dec. 3	North	13	13	.....	13	13
1895.						
May 25	Great East	16	16	.....	16	16
June 3	North	25	25	.....	25	25
14	.....do	.....	.....	139	139	139
24	Starry Arteel	.....	.....	483	483	483
24	Zapadnie (killed by guards)	.....	.....	2	2	2
26	Great and Little East	.....	.....	471	471	471
29	Zapadnie (killed by guards)	.....	.....	2	2	2
July 1	North	.....	.....	156	156	156
8	Zapadnie	.....	.....	232	232	232
8	Zapadnie (killed by guards)	.....	.....	3	3	3
11	Great and Little East	.....	.....	538	538	538
20	Zapadnie (killed by guards)	.....	.....	3	3	3
22	Starry Artell and North	.....	.....	279	279	279
30	Zapadnie (killed by guards)	.....	.....	7	7	7
	Total	196	196	2,315	2,511	2,511

Eleven of the foregoing skins, taken from seals killed for native food during the fall of 1894, were damaged by blue foxes, leaving 2,500 marketable skins to be shipped by the lessees.

THOS. E. ADAMS,
Assistant Special Treasury Agent.

EXHIBIT C.

Receipts for fur-seal skins shipped from the seal islands, including eleven skins shipped to the collector of customs at San Francisco, Cal., 1895.

ISLAND OF ST. PAUL,
Bering Sea, Alaska, August 11, 1895.

This is to certify that 12,500 fur-seal skins have this day been shipped on board the North American Commercial Company's steamer *Bertha*, J. M. Hays, master, consigned to the North American Commercial Company at San Francisco, Cal.

JAMES JUDGE,
Assistant Treasury Agent.

ISLAND OF ST. GEORGE,
Bering Sea, Alaska, August 14, 1895.

This is to certify that 2,500 fur-seal skins have this day been shipped on board the North American Commercial Company's steamer *Bertha*, J. M. Hays, master, consigned to the North American Commercial Company, San Francisco, Cal.

THOMAS E. ADAMS,
Assistant Treasury Agent.

ISLAND OF ST. GEORGE,
Bering Sea, Alaska, August 14, 1895.

This is to certify that 11 damaged fur-seal skins boxed have this day been shipped on board the North American Commercial Company's steamer *Bertha* (J. M. Hays, master), consigned to the collector of customs, San Francisco, Cal.

THOS. E. ADAMS,
Assistant Treasury Agent.

EXHIBIT D.

Distribution of community fund, St. Paul Island, Alaska, August 1, 1895—Division No. 6.

To 12,500 prime fur-seal skins, at 50 cents	$6,250.00	
To 140 prime fur-seal skins, taken in 1894, rejected by local agent, subsequently accepted by the lessees, but not included in Division No. 5	70.00	
		$6,320.00
First class:		
Arkashof, Arseny	164.38	
Bourdukoffsky, Apollon	164.38	
Buterin, Karp	164.38	
Gromof, Nicoli	164.38	
Kochooten, Jacob	164.38	
Kochooten, John	164.38	
Kozerof, Stepan	164.38	
Krukof, Nicoli	164.38	
Mandregan, Neon	164.38	
Melevedov, Anton	164.38	
Nedarazof, Martin	164.38	
Nedarazof, Stepan	164.38	
Ovstegof, Peter	164.38	
Pankof, Parfiri	164.38	
Baranchin, Daniel	164.38	
Reseff, Nicoli	164.38	
Sedick, Theodore	164.38	
Stepetin, Elary	164.38	
Terrakanof, Kerrick	164.38	
Tetof, Peter	164.38	
Tetof, Neon	164.38	
Volkof, Markel	164.38	
		3,616.36
Second class:		
Artomanof, Kerrick	131.52	
Bogodanof, Nicoli	131.52	
Emanof, George	131.52	
Fratis, John	131.52	
Galaktionef, Alexander	131.52	
Golotof, John	131.52	
Haberof, Paul	131.52	
Kochooten, Eupheme	131.52	
Koznitzof, John	131.52	
Merculief, Alexander	131.52	
Melevedov, Alexander	131.52	
Seduli, Vassily	131.52	
Shabolin, Necon	131.52	
Stepetin, Dorofay	131.52	
Shaisnakof, Paul	131.52	
		1,972.80
Third class:		
Hansen, Alexander	105.21	
Melevedov, Simeon	105.21	
Nozekof, Simeon	105.21	
Stepetin, John	105.21	
		420.84
Fourth class:		
Kochergin, George	30.00	
Krukof, John M	30.00	
Krukof, John N	30.00	
Krukof, Maxim	30.00	
Sedick, Philip	30.00	
Shaisnikof, Valerian	30.00	
Tetof, Zahar	30.00	
		210
Special class:		
Nicoli Krukoff (first chief)	50.00	
Nicoli Gromoff (second chief)	50.00	
		100

We, the undersigned, do hereby certify that the foregoing is a true statement of the distribution of the community fund, derived from taking fur-seal skins on the island of St. Paul during the season of 1895; that the apportionment is just and equitable; that the amount set opposite each name has been credited to such native sealer on the books of the North American Commercial Company, and also placed to their credit on their pass books.

Subscribed this the 2d day of August, 1895.

J. C. REDPATH,
Agent North American Commercial Company.
NICOLI KRUKOFF,
First Chief.
NICOLI GROMOFF,
Second Chief.
JOSEPH B. CROWLEY,
Special Treasury Agent in Charge Seal Islands.

Distribution of community fund, St. George Island, Bering Sea, Alaska—Division No. 6.

To taking 2,500 fur-seal skins, at 50 cents		$1,250.00
By seven men, first class	$475.37	
By eight men, second class	434.56	
By six men, third class	244.50	
By one man, fourth class	20.57	
By salary to first chief	50.00	
By salary to second chief	25.00	
		1,250.00
First class:		
Demetri Lestinkoff	67.91	
Eustin Sweztoff	67.91	
Eoff Philomonoff	67.91	
Simeon Philomonoff	67.91	
Elexia Oustigoff	67.91	
Corniel Grokoff	67.91	
Joseph Merculiff	67.91	
		475.37
Second class:		
Nicoli Melovansky	54.32	
Peter Rezanzoff	54.32	
Andronic Philomanoff	54.32	
Stephan Lekanoff	54.32	
Simeon Oustigoff	54.32	
Parfiri Galanin	54.32	
Michael Lestinkoff	54.32	
Peter Prokopief	54.32	
		434.56
Third class:		
George Merculiff	40.75	
Gregory Philomanoff	40.75	
Evan Kulikuloff	40.75	
Innokenty Rezanzoff	40.75	
Nicoli Nederazoff	40.75	
Evan Merculiff	40.75	
		244.50
Fourth class:		
Innokenty Philomanoff		20.57
Special:		
Demetri Lestenkoff (first chief)	50.00	
Eustin Swetzoff (second chief)	25.00	
		75.00

We hereby certify that the foregoing is a true statement of the distribution of the community fund, derived from the taking of fur-seal skins on the island of St. George, Alaska, during the season of 1895; that the apportionment is just and equitable, and that each individual sealer has been credited on the books of the North American Commercial Company with the same amount as herein set opposite each name, etc.

St. George Island, August 1, 1895.

THOS. E. ADAMS,
Assistant Special Agent.
DANIEL WEBSTER,
Agent North American Commercial Company.
DEMETRI LESTENKOFF,
Native Chief.

REPORT OF JOSEPH MURRAY, SPECIAL TREASURY AGENT, FOR THE YEAR 1894.

OFFICE OF SPECIAL AGENT,
TREASURY DEPARTMENT,
Washington, D. C., December 30, 1894.

SIR: I have the honor to report that, in compliance with Department instructions dated June 12, 1894, I went to the seal islands of Alaska and inspected the fur-seal rookeries, noting particularly the numbers and present condition of the seals in comparison with what they were every year since I first saw them in 1889.

I afterwards sailed along the American coast from Unalaska to San Francisco, calling at every important settlement on the way; inspecting every salmon stream and cannery on the route; making diligent inquiry into the condition of the native inhabitants of Alaska; the wants and desires of the white settlers who are busy developing the natural resources of the Territory, and noting the views of the people generally on all that appertains to the present and future prosperity of the new country.

On July 10, I left San Francisco on board the U. S. revenue cutter *Rush*, Capt. C. L. Hooper commanding, and arrived on the 15th at Port Townsend, where we were afterwards joined by Hon. C. S. Hamlin, Assistant Secretary of the Treasury, who accompanied us to the seal islands and back as far as Vancouver City, British Columbia.

We sailed on board the *Rush* from Port Townsend July 23 and arrived at the seal islands August 3, first touching at St. George and sailing along the coast, inspecting all the rookeries on that island except Zapadnie, and then sailed over to St. Paul Island, where we landed in a dense fog at 6 o'clock p. m.

The seal islands, commonly called the Pribilof group, consist of four distinct islands in Bering Sea, situated between 55° and 57° north latitude, and about 170° west longitude from Greenwich. They are about 200 miles west from the nearest point on the mainland of Alaska, 200 miles north of the Aleutian chain, and 200 miles south of St. Matthews Island, or, in other words, they are about 200 miles away from any other land.

The seal islands are nearly 2,300 miles from San Francisco, and about 1,600 miles, as the ship sails, directly west from Sitka.

They are known, respectively, as St. Paul, St. George, Otter, and Walrus islands.

Otter and Walrus are small and of no importance, and as the seals do not haul out at present on either of them regularly, and as they are not included in the lease, it will not be necessary to refer to them again.[1]

St. Paul, the larger of the two principal islands, is long, low, and narrow, its extreme length and breadth being 12 and 6 miles, respectively, and its total area being about 36 square miles. Around the greater part of the island runs a long, low, sandy beach, easy of access, where the seals haul out without difficulty, and where they were to be

[1] In 1894 about 1,000 seals hauled out on Otter Island.

found for a century in greater numbers than on any other spot on the earth.

St. George Island has an area of about 27 square miles, and its sides rise out of the water so abruptly and so steep that there are only a few places around the whole coast upon which anything coming out of the sea can find a footing, and consequently the number of seals landing must of necessity be limited, which accounts, I think, for the great difference in the numbers to be found on the two islands.

CLIMATE.

The islands are situated in the path of the Japan current, which, on meeting the icy waters of the north at this point, brings forth the dense summer fogs for which Bering Sea is so justly famous, and in which the islands are enveloped from May to September. Owing to difference of altitude, St. George Island being much higher than St. Paul, there is a very marked difference in the amount of rainfall on each—fully five times the volume falling on St. George, although the islands are only 40 miles apart.

The average temperature for the year is about 35°, ranging from 35° to 60° in the summer, and from zero to 15° below in winter.

Both of the islands are of volcanic origin, and there is not a sign of tree, shrub, or vine on either of them. They are covered in season with moss, grass, and wild flowers, but it is impossible to raise anything by cultivation, for, no matter how rich the soil may be, there is not enough sunshine to ripen the crop. Thick fog, leaden sky, drizzly rain, mist, and moisture are the general conditions ruling there, and during a continuous residence of thirty months—fifteen on each island—I saw only six wholly clear, sunshiny days.

The surface of the highlands on St. George is covered with loose and broken rock—rock broken into all shapes and sizes, from that of a pebble to boulders weighing many tons, and thrown together into every imaginable position except a level one.

On St. Paul the winds of centuries have heaped the sands of the seashore into dunes of considerable height and magnitude, and filled up many cavities and rough spots, but, excepting a slight covering of most nutritious reindeer moss, the greater part of the surface of St. George remains to-day as it came from the hands of the Creator.

And yet nature finds a use for those rugged and unshapely rocks, for under and between them, where the prowling, crafty fox can not penetrate, millions of sea birds build their nests, and lay their eggs, and rear their young. I use the word millions advisedly, and I believe I might say billions, and yet be within the bounds of truth.

One of the most beautiful sights to be seen in this otherwise desolate region is the return of the birds from the sea to their nests during the hatching season, when toward evening they fill the air and darken the sun for hours in their flight with their countless numbers.

Here, too, on St. George Island the famous blue fox finds a permanent home, and grows to perfection, for here he has abundance of choice and dainty food, and no one to molest him out of season.

SEALS.

To these islands, notwithstanding their cheerless aspect, their dreary barren shores, their damp and foggy climate, come the fur seals every year with the unerring regularity of the seasons; here they haul out of the water and make their home on land for six months at least, during

which time they bring forth and rear their young, after which they return to the sea, and disappear in the depths of the great ocean until the days lengthen out again and nature tells them to return.

Given a few warm, sunny days any time about April 20, and the "first bull" may be seen carefully reconnoitering a rookery and eventually hauling out and taking possession of the identical rock or spot of earth upon which he dwelt with his family last year, and upon which he himself, in all probability, was born.

Early in May the breeding males or bulls begin to arrive in large numbers and select their stations, upon which they lie down and sleep for several weeks, or until about the time the breeding females or cows are expected, when they assume an upright sitting posture and send forth at intervals a cry peculiar to the fur seal, which is supposed to be an invitation or signal to the approaching cows.

About the middle of May, and long before the arrival of the cows, the large young males, or bachelors, begin to arrive at the islands; and they, too, would haul out upon the breeding grounds were it not that the bulls are there to prevent it by driving them off. No male seal can stay on the breeding grounds that is not old enough and strong enough to maintain his position against all comers. The young males are thus naturally forced to herd by themselves at a safe distance from the breeding grounds during the breeding season, and this regulation in turn serves a very good purpose, for, as the breeding and killing seasons run together through the months of June and July, the young males can be easily surrounded and driven to the killing grounds without having to disturb the breeding seals.

None but young male seals are ever killed for food or for skins or for any other purpose on the islands.

About June 10 the cows begin to arrive and haul out and select their stations for the season.

It has been claimed that the bulls meet the cows at the water's edge and fight bloody battles for them, but my observation has convinced me that the cow herself selects her station, and having once made a choice she is certainly compelled to remain there.

Shortly after the arrival of the cows the young seals or pups are to be seen upon the rookeries; and it is safe to say that, with few exceptions, they are all brought forth by July 25.

I have for six years paid particular attention to the formation of the harems or families, and I find that from July 10 to 20 the rookeries are fullest and at their best, and I have counted from 1 to 72 cows in one harem.

After bringing forth their young the cows go into the sea to feed, returning to and nursing their offspring every few hours at first, but gradually lengthening their stay into days and weeks before they return.

When about four or five weeks old the pups begin to stir around and get acquainted with one another, forming pods or crowds, and running in company, at first inclining toward the interior of the rookery, and afterwards, as they advance in age and strength, they direct their steps toward the beach, where they paddle around in the shallows until, step by step, they learn to swim.

About the beginning of August the harems are broken up, the compact formation of the herd is dissolved, and the different sexes mix and mingle together indiscriminately all over the rookeries and hauling grounds.

When the bull hauls out in May he is as "round as a barrel" and as

fat and sleek and glossy as possible; but after a four months' residence on land, where he never tastes food or drink, he becomes so poor and gaunt and weak that it is with the utmost difficulty he crawls off into the sea when he leaves, late in August or early in September, to take his annual journey through Bering Sea and the North Pacific Ocean. By September 15 the bulls have disappeared, and by the middle of October the largest of the young males have followed them.

Early in November the cows begin to leave, and if the weather turns unusually cold or rough they do not delay their departure.

The pups leave about the middle of November, and the yearlings, male and female, leave early in December.

In exceptionally fine weather it is common to see a few seals in the waters around the islands all winter, and in rare instances they have been taken on shore as late as January; but the great herd follows a well-defined and (at present) well-known path through the Bering Sea and the North Pacific Ocean south and east from the seal islands to the coast of California, nearly opposite Cape St. Lucas, and return along the American coast and the Aleutian Islands to Bering Sea.

The following very accurate description of the fur seal and its peculiarities is taken from the report of the United States Bering Sea Commissioners:

1. The northern fur seal (*Callorhinus ursinus*) is an inhabitant of Bering Sea and the Sea of Okhotsk, where it breeds on rocky islands. Only four breeding colonies are known, namely, (1) on the Pribilof Islands, belonging to the United States; (2) on the Commander Islands, belonging to Russia; (3) on Robben Reef, belonging to Russia; and (4) on the Kurile Islands, belonging to Japan. The Pribilof and Commander Islands are in Bering Sea; Robben Reef is in the Sea of Okhotsk, near the island of Saghalien, and the Kurile Islands are between Yezo and Kamchatka. The species is not known to breed in any other part of the world. The fur seals of Lobos Island and the south seas, and also those of the Galapagos Islands and the islands off Lower California, belong to widely different species, and are placed in different genera from the northern fur seal.

2. In winter the fur seals migrate into the North Pacific Ocean. The herds from the Commander Islands, Robben Reef, and the Kurile Islands move south along the Japan coast, while the herd belonging to the Pribilof Islands leaves Bering Sea by the eastern passes of the Aleutian chain.

3. The fur seals of the Pribilof Islands do not mix with those of the Commander and Kurile islands at any time of the year. In summer the two herds remain entirely distinct, separated by a water interval of several hundred miles; and in their winter migrations those from the Pribilof Islands follow the American coast in a southeasterly direction, while those from the Commander and Kurile islands follow the Siberian and Japan coasts in a southwesterly direction, the two herds being separated in winter by a water interval of several thousand miles.

This regularity in the movements of the different herds is in obedience to the well-known law that migratory animals follow definite routes in migration, and return year after year to the same places to breed. Were it not for this law there would be no such thing as stability of species, for interbreeding and existence under diverse physiographic conditions would destroy all specific characters.[1]

The pelage of the Pribilof fur seals differs so markedly from that of the Commander Islands fur seals that the two are readily distinguished by experts, and have very different values, the former commanding much higher prices than the latter at the regular London sales.

4. The old breeding males of the Pribilof herd are not known to range much south of the Aleutian Islands, but the females and young appear along the American coast as far south as northern California. Returning, the herds of females move north-

[1] The home of a species is the area over which it breeds. It is well known to naturalists that migratory animals, whether mammals, birds, fishes, or members of other groups, leave their homes for a part of the year because the climatic conditions or the food supply become unsuited to their needs; and that wherever the home of a species is so situated as to provide a suitable climate and food supply throughout the year such species do not migrate. This is the explanation of the fact that the northern fur seals are migrants, while the fur seals of tropical and warm temperate latitudes do not migrate.

ward along the coasts of Oregon, Washington, and British Columbia in January, February, and March, occuring at varying distances from shore. Following the Alaskan coast northward and westward, they leave the North Pacific Ocean in June, traverse the eastern passes in the Aleutian chain, and proceed at once to the Pribilof Islands.

5. The old (breeding) males reach the islands much earlier, the first coming the last week in April or early in May. They at once land and take stands on the rookeries, where they await the arrival of the females. Each male (called a bull) selects a large rock, on or near which he remains until August, unless driven off by stronger bulls, never leaving for a single instant, night or day, and taking neither food nor water. Both before and for some time after the arrival of the females (called cows) the bulls fight savagely among themselves for positions on the rookeries and for possession of the cows, and many are severely wounded. All the bulls are located by June 20.

6. The bachelor seals (holluschickie) begin to arrive early in May, and large numbers are on the hauling grounds by the end of May or first week of June. They begin to leave the islands in November, but many remain into December or January, and sometimes into February.

7. The cows begin arriving early in June, and soon appear in large schools or droves, immense numbers taking their places on the rookeries each day between the middle and the end of the month, the precise dates varying with the weather. They assemble about the old bulls in compact groups, called harems. The harems are complete early in July, at which time the breeding rookeries attain their maximum size and compactness.

8. The cows give birth to their young soon after taking their places on the harems, in the latter part of June and in July, but a few are delayed until August. The period of gestation is between eleven and twelve months.

9. A single young is born in each instance. The young at birth are about equally divided as to sex.

10. The act of nursing is performed on land, never in the water. It is necessary, therefore, for the cows to remain at the islands until the young are weaned, which is not until they are four or five months old. Each mother knows her own pup, and will not permit any other to nurse. This is the reason so many thousand pups starve to death on the rookeries when their mothers are killed at sea. We have repeatedly seen nursing cows come out of the water and search for their young, often traveling considerable distances and visiting group after group of pups before finding their own. On reaching an assemblage of pups, some of which are awake and others asleep, she rapidly moves about among them, sniffing at each, and then gallops off to the next. Those that are awake advance toward her, with the evident purpose of nursing, but she repels them with a snarl and passes on. When she finds her own she fondles it a moment, turns partly over on her side so as to present her nipples, and it promptly begins to suck. In one instance we saw a mother carry her pup back a distance of 15 meters (50 feet) before allowing it to nurse. It is said that the cows sometimes recognize their young by their cry, a sort of bleat.

11. Soon after birth the pups move away from the harems and huddle together in small groups, called "pods," along the borders of the breeding rookeries and at some distance from the water. The small groups gradually unite to form larger groups, which move slowly down to the water's edge. When six or eight weeks old the pups begin to learn to swim. Not only are the young not born at sea, but if soon after birth they are washed into the sea they are drowned.

12. The fur seal is polygamous, and the male is at least five times as large as the female. As a rule each male serves about fifteen or twenty females, but in some cases as many as fifty or more.

13. The act of copulation takes place on land, and lasts from five to ten minutes. Most of the cows are served by the middle of July, or soon after the birth of their pups. They then take to the water, and come and go for food while nursing.

14. Many young bulls succeed in securing a few cows behind or away from the breeding harems, particularly late in the season (after the middle of July, at which time the regular harems begin to break up). It is almost certain that many, if not most, of the cows are served for the first time by these young bulls, either on the hauling grounds or along the water front.

These young bulls may be distinguished at a glance from those on the regular harems by the circumstance that they are fat and in excellent condition, while those that have fasted for three months on the breeding rookeries are much emaciated and exhausted. The young bulls, even when they have succeeded in capturing a number of cows, can be driven from their stands with little difficulty, while (as is well known) the old bulls on the harems will die in their tracks rather than leave.

15. The cows are believed to take the bull first when 2 years old, and deliver their first pup when 3 years old.

16. Bulls first take stands on the breeding rookeries when 6 or 7 years old. Before this they are *not powerful enough to fight* the older bulls for positions on the harems.

17. Cows, when nursing, regularly travel long distances to feed. They are frequently found 100 or 150 miles from the islands, and sometimes at greater distances.

18. The food of the fur seal consists of fish, squids, crustaceans, and probably other forms of marine life.

19. The great majority of cows, pups, and such of the breeding bulls as have not already gone, leave the islands about the middle of November, the date varying considerably with the season.

20. Part of the nonbreeding male seals (holluschickie), together with a few old bulls, remain until January, and in rare instances until February, or even later.

21. The fur seal as a species is present at the Pribilof Islands eight or nine months of the year, or from two-thirds to three-fourths of the time, and in mild winters sometimes during the entire year. The breeding bulls arrive earliest and remain continuously on the islands about four months. The breeding cows remain about six months, and part of the nonbreeding male seals about eight or nine months, and sometimes throughout the entire year.

22. During the northward migration, as has been stated, the last of the body or herd of fur seals leave the North Pacific and enter Bering Sea in the latter part of June. A few scattered individuals, however, are seen during the summer at various points along the northwest coast. These are probably seals that were so badly wounded by pelagic sealers that they could not travel with the rest of the herd to the Pribilof Islands. It has been alleged that young fur seals have been found in early summer on several occasions along the coast of British Columbia and southeastern Alaska. While no authentic case of the kind has come to our notice, it would be expected from the large number of cows that are wounded each winter and spring along these coasts and are thereby rendered unable to reach the breeding rookeries, and must perforce give birth to their young (perhaps prematurely) wherever they may be at the time.

23. The reason the northern fur seal inhabits the Pribilof Islands to the exclusion of all other islands and coasts is that it here finds the climatic and physical conditions necessary to its life wants. This species requires a uniformly low temperature and overcast sky and a foggy atmosphere to prevent the sun's rays from injuring it during the long summer season when it remains upon the rookeries. It requires also rocky beaches on which to bring forth its young. No islands to the northward or southward of the Pribilof Islands, with the possible exception of limited areas on the Aleutian chain, are known to possess the requisite combination of climate and physical conditions.

All statements to the effect that fur seals of this species formerly bred on the coasts and islands of California and Mexico are erroneous, the seals remaining there belonging to widely different species.

DRIVING AND KILLING.

When the first young males, or bachelors, arrive at the islands in May, a drive is made for food for the natives, who are hungry for fresh meat, not having tasted any since the preceding November.

All of the driving is done under the immediate and exclusive directions of the native chief, who is the most experienced and most trustworthy man on the island.

Should the seals happen to lie near the water, it will be necessary to wait till the tide runs out before disturbing them. At the proper time a dozen men are on the ground, and silently and swiftly running in single file along the beach they form a line between the seals and the sea; and then the startled animals will immediately start inland, where they are slowly followed by the men, until they are too far from the beach to escape to the water, when they are put in charge of three or four of the men, who bring them along slowly to the killing grounds, which is never less than half a mile away from the nearest breeding seals. No other part of the work done in taking seal skins is more carefully performed than the driving of seals; they are never driven at a pace greater than about one mile in three hours, and most of the driving is done during the night, so as to take advantage of the dew and moisture, and to avoid the sudden appearance of the sun, which is always more or less injurious to seal life on a drive. The stories told by interested men about careless and reckless driving are not true, and, for obvious reasons,

can not be true, because overdriving means overheating, and an overheated fur seal is one from which the fur has fallen and left the skin valueless, and that means a loss to natives, lessees, and Government alike. As there is no one to benefit by overdriving, it is never indulged in; and during an experience of six years on the islands I never saw a skin injured by overheating or overdriving.

As most of the drives are made in the night, the seals are allowed to lie in the damp grass around the killing grounds for several hours before killing takes place; and it is customary to allow them to rest for a few hours, no matter when they are driven, because it is best for the skin and for the flesh that the animal be killed while it is cool and quiet rather than while it may be warm and excited.

There are four different and well-defined killing grounds on St. Paul Island, from some one of which the most distant hauling ground or rookery is not to exceed 2½ miles.

On St. George there are two killing grounds, from some one of which the most distant rookery or hauling ground is not to exceed 3 miles, and during the past fifteen years there has not been a longer drive made on either island than 3 miles, interested parties to the contrary notwithstanding.

Generally the killing is done just after breakfast, and the whole population turns out and takes part in the work.

The men and boys are divided into grades or classes: Clubbers, stickers, flipperers, and skinners; the women and girls following the skinners and taking care of the blubber and meat.

Two men at opposite sides of the herd will, by advancing till they meet, cut out twenty or thirty seals from the main body and drive them up to the killing ground, where six experienced men stand armed with clubs of ash or hickory about 5½ feet long and about 3 inches thick at the heavier end, which end is generally bound in sheet iron to prevent its destruction by the continuous biting of the seals.

The clubbers are under the immediate orders of the lessee's local agent who is a man of large experience in seal work, one who can tell at a glance how much the skin of any particular seal will weigh, and he points out the seals to be clubbed.

A smart blow on the head knocks the seal down and stuns him, and if the blow has been properly dealt he never recovers; but quite often it requires two to three blows from a bungler to finish him. The clubbed seals are dragged into line and counted, and then "stuck" and "flippered," or, in other words, they are stabbed to the heart and allowed to bleed freely; and then a knife is drawn around the head and flippers, severing the skin and leaving it ready for the skinner, who strips it off in short order and spreads it evenly on the damp grass, flesh side down, to cool.

These several operations are repeated till the desired number are killed, when the remaining seals are allowed to go into the water and return to the hauling grounds.

After the skin has been removed, the women take the carcass and, after stripping off the blubber or fat, cut off the choice meat in strips to dry; and, when dried, they pack it into the dried stomach of the sea lion, where it is kept air-tight and preserved for an indefinite period.

The remainder of the seal is boiled and eaten as wanted.

When all the seals killed are skinned, the skins are taken by wagon to the salt house, where they are assorted and carefully inspected by the lessee's agent, who throws out as rejected all skins that do not come up to a certain standard. There are three classes of rejected skins, namely: *cut, small, and stagy.*

A cut skin is one that has been bitten through by one seal biting another during one of their many battles, or it may have been accidentally cut during the operation of skinning; a small skin is one that weighs a little less than the minimum standard set up by the lessee's agent, generally less than 6 pounds. After July the fur seal sheds his hair, and it is during the shedding season, when the old hair is falling out and before the new hair has attained its full growth, that the skin is said to be stagy.

The fur of a stagy skin is just as good as any other; but the half-grown new hair, being shorter than the fur, can not be plucked out by hand or by machinery, and is therefore considered a blemish on the skin, in consequence of which its price and value are naturally lowered in the market.

Heretofore, and until the adoption of the modus vivendi in 1891, it was customary to allow the natives to kill seals for food at any and all times when they were to be found on the islands. And it was in this way, and in this way only, that stagy skins were ever taken and wasted, because all skins that are rejected by the lessee's agent are wasted so far as Government interests and revenue are concerned.

No killing should be permitted for any purpose whatsoever during the stagy season, say from July 31 to November 15.

After a thorough inspection, the skins are counted one by one in presence of the Treasury agent, who makes a record of the same in a book kept for that purpose, and in which he also enters the date of the drive, the rookery driven from, the hour of driving, the state of the weather, the number of seals killed, the number of skins accepted, the number rejected, and the cause of such rejection.

The accepted skins are then salted by the natives in presence and under the direction of the native chief and the lessee's agent. The skins are spread on the floor, hair side down, and covered with a layer of coarse salt; again a layer of skins is laid on and covered with salt as before, and the operation is repeated until all are salted.

After lying for at least five days in the first salt they are shaken out and examined, and resalted as before, excepting that the top layer is now put down first and the original position of all layers reversed.

When sufficiently cured they are bundled by the natives, who, spreading a thin layer of salt between two skins, lay them flesh side to flesh side, and fold the two into a neat, compact bundle, which they tie securely with strong twine, and throw into the pile for shipping. From the shipping pile they are again counted out, bundle by bundle, by the Treasury agent, in whose presence they are always taken from the salt house to the boat, from which they are again counted by the mate into the steamer that takes them to San Francisco, where they are counted once more by the customs officers, and finally packed into barrels by the lessees and shipped direct to London via New York.

Early in the morning of August 4, 1894, a drive was made from the Reef rookery in presence of Mr. Hamlin, who accompanied the native men who did the work, and who was present throughout the whole operation of driving, killing, and skinning the seals, inspecting, assorting, counting, and salting the skins, just as the same operations have been performed every killing season for the past quarter of a century.[1]

[1] The only exception to this is in the method of killing. The olden rule was to allow each man to first knock down his share and then turn in and skin them, but experience taught us that this was bad policy, for the carcasses that were allowed to cool and stiffen before skinning were very apt to have their skins injured in the operation, hence the adoption of the present improved system.

During our five days' stay on St. Paul Island we inspected all the rookeries, walking over many of them, and I carefully noted their condition, the sparsely settled breeding grounds, the deserted hauling grounds, and the desolate appearance of the place in comparison with what I saw there only five years ago, when hundreds of thousands of seals swarmed over the greater portion of the ground that is now bare and abandoned.

Next to the shriveled condition of the seal herd as a whole, the most noted change I observed on the breeding grounds since 1889 was the great number of idle bulls, young and vigorous, lying around in all directions, watching an opportunity to secure cows.

They can not succeed, however, for during the past ten years the cows have been the quarry of the pelagic sealer, whose improved methods of hunting in the open waters, and whose unceasing, unerring, and merciless hunting of them at all seasons, have at length succeeded in destroying at least a million nursing mothers, who, with their starved offspring and unborn young, represent a loss of many millions, which in turn accounts for the acres of bare and unoccupied rookery ground over which we walked without finding a seal. When in 1891 I inspected the same rookeries I counted 1,250 idle bulls at the very height of the rutting season, and I have since observed a steady increase of breeding bulls as the herd continued as steadily to decrease as a whole.

So plain and palpable has this increase of bulls been for the past five years, it has become a topic of general conversation among those who have had opportunities to observe the rookeries from year to year during the breeding season; and in his annual report for 1894 the agent in charge of the islands says:

> The only class of seals that showed an increase over last year were the young bulls, who were unable to find a single cow with which to start a harem on the rookeries. There were more idle bulls of breeding age than there were bulls with harems on the breeding grounds. (See Report of Joseph B. Crowley, 1894.)

Another very important feature observed in our inspection of the rookeries in 1894 was the absence of dead pups in the early part of August, for up to our leaving on the 8th I had not seen a dead pup on the island, and the agent in charge, who was on St. Paul Island from June to the latter part of August and who kept a close watch for dead pups, tells me now that it was not till about August 20 there was a dead pup to be seen, but from that date to the close of the season, according to official communications received from the islands, the carcasses of dead pups, starved and emaciated, increased with appalling rapidity until 12,000 were counted by the assistant agents.

The agents report that they actually counted 12,000 dead pups on the accessible portions of the rookeries to which they could go without disturbing the seals, and after making due allowance for the portions not visited at all, they believe that a fair estimate of the total number of dead pups on the two islands of St. Paul and St. George in 1894 would aggregate 20,000. (See report of Joseph B. Crowley, 1894.)

And Mr. Joseph B. Crowley tells us that—

> Every precaution was taken to count only such as appeared to have died late in the season. None of the small young pups which showed decay and bore the appearance of having died early in the breeding season were counted. * * * I do not make recklessly the statement of the death of pups from starvation. There is positive proof of it. I witnessed the beginning of its disastrous results the last of August before leaving the islands. Visiting the rookeries in person, I found hundreds of pups which had lately died. They bore every appearance of having died of starvation. Hundreds that were yet alive were so wasted and weak they could scarcely drag themselves over the rocks and would not attempt to get out of the way when approached. (Report of J. B. Crowley, 1894.)

"What is the cause of the death of so many fur-seal pups?" has been asked many times during the past five years' discussion of the seal question, and many conflicting answers have been given. I think the following, under the circumstances, is an answer that can not be contradicted. The pelagic-sealing season opened in Bering Sea on August 1, 1894, in accordance with the international regulations made possible by the Bering Sea Tribunal, under which pelagic sealers are licensed to kill seals, with spears, outside of the 60-mile zone around the seal islands, and immediately we see the result of their work in the thousands of pups starved to death after their mothers had been killed at sea by the men whose right to kill them, at certain seasons, has been established and acknowledged by the very tribunal that was created for the purpose of preventing the destruction of the fur-seal herd.

One of the most horrible and harrowing sights imaginable is that of being surrounded on the bleak and inhospitable shores of the Pribilof Islands by thousands of dead and dying pup seals whose death has been the result of slow starvation, and whose hungry cries and almost human appeals for food and life must be made in vain, for, no matter how willing and anxious one may be to render assistance, one feels it is beyond human power to arrest the gnawing of hunger in an animal who is totally dependent for sustenance on a mother who was killed a month ago by pelagic sealers!

Those who once witnessed such a sight never can forget it, and occasionally I receive letters from some of them which run somewhat like the following:

Do tell me what is to be done with the few remaining seals. * * * If these steps had been taken last year, even, there might have been enough left to tell the tale, but as it is I can not but feel what a pitiable sight the rookeries will present next year. It was discouraging enough last spring when I compared the rookeries with what I had seen just the year before. My heart bled for the poor starving pups so much, the last stroll I took on the rookeries, that I could never go back. I don't see how the judge could stand to see 10,000 dead ones. It would have broken my heart I know. The morning we came into Dutch Harbor on our voyage down we saw three sealing vessels sailing out toward the 60-miles limit. Oh, what a farce, what a snare and delusion that 60-mile limit was! How could anyone who had ever been to the seal islands and noted the habits of the feeding cows ever recommend such a murderous proposition? Even I knew better than that. * * * But 13,000 cows taken staggered me. I had expected about 5,000 or 6,000, and even calculated the terrible consequence upon the rookeries, but 13,000! that was terrible, terrible!

The writer of that letter is the wife of the Treasury agent, an American lady of Christian education, culture, and refinement, who naturally felt horrified at the sight she saw on the rookeries, and, like the tender and merciful woman she is, she denounces the system, regulation, custom, or whatever else it may be called, which makes such suffering possible.

One instance in this connection worth recording is that of a pelagic sealer whose heart was touched by the pitiful cries of an orphan pup, and the story is told by an eyewitness under oath:

Of the seals that were caught off the coast fully 90 out of every 100 had young pups in them. The boats would bring the seals on board the vessel, and we would take the young pups out and skin them. If the pup is good and a nice one, we would skin it and keep it for ourselves. I had eight such skins myself. Four out of five, if caught in May or June, would be alive when we cut them out of their mothers. One of them we kept for pretty near three weeks alive on deck by feeding it on condensed milk. One of the men finally killed it because it cried so pitifully. (Affidavit of Alfred Dardean.)

The reverse side of the question is that held by the average pelagic sealer, who kills the mother seal and cuts out her unborn young or leaves the born young to slowly starve to death on the rookeries.

The British Bering Sea commissioners in this connection stated:

The fur of the female is equally good with that of the male, and under the conditions under which the hunting is carried on, there is room for no sentimental considerations in favor of either sex.

I was informed by the Treasury agent and others who had wintered on the seal islands that the winter of 1893–94 had been one of unusual severity, rigor, and length, and that the seals had been much later in hauling out than for many years past.

This happens occasionally, for whenever it is unusually cold during the spring and early summer months, and the ice hangs around the islands till the latter end of May or early June, the seals will not or can not haul out until passages are made and the rocks and beach cleared of ice; all of which had to be done last season.

From the same source I also learned that never before, since the United States owned the islands, were seals so few upon the rookeries during the killing season of June and July, and that the 20,000 killables allowed to be taken this year were not to be found unless the standard weight and size should be lowered by the lessees and smaller seals taken. As the lessees have not taken any skins weighing less than 7 pounds, and have killed some 16,000 first-class seals, I have no doubt of their being able to get 20,000 had they chosen to take 4,000 skins weighing from 5 to 6 pounds each.

This opens up a question of the utmost importance to our Government, for if we can not find 20,000 young male seals on the seal islands, whose skins will weigh from 7 to 12 pounds each, after a modus vivendi, and a general rest of nearly four years, it is most assuredly time for us to search for the cause of the steady decrease of the fur-seal herd.

To all those whose long and practical experience on the islands and among the seals gives them a right to be heard, the explanation is not hard, but unfortunately, because of many clashing interests, there has been a glamor of secrecy and sacredness thrown around the fur-seal question, by and through which plain, practical, business men have been debarred from expressing an opinion, or, having dared to express one, have been tabooed by interested parties. For years the cause of the decrease in the seal herd has been discussed with unabated vigor; so-called improved methods of all sorts have been suggested, and a few of them tried; and, finally, when the question assumed international proportions, arbitration was resorted to in hopes of forever settling a vexed question and of saving from total extinction the remnants of our seal herd that had, only a few years ago, been numbered by the millions and valued at nearly $100,000,000.

In spite of all that has been done thus far, however, the seal herd is rapidly decreasing, and in the very nature of things must continue to decrease so long as scores of ships and thousands of men are permitted to hunt them in the open sea and kill them without regard to age, sex, or condition.

There is no more mystery about the cause of the decrease and destruction of the fur-seal herd than there would be about the decrease of a herd of cattle on the plains of Colorado if the owner should continue to sell or kill, or allow someone else to sell or kill, his breeding cows for a series of years, or until they were all gone.

Twice since the discovery of the seal islands and during Russian occupation have the seals been almost exterminated because of the indiscriminate slaughter of the female, or mother seal, for it is well known that the Russians continued to slaughter everything on the

islands without regard to age, sex, or condition until 1834, when the question of total extermination stared them in the face.

Veniaminov tells us:

From the time of the discovery of the Pribilof Islands up to 1805 the taking of fur seals progressed without count or lists, and without responsible heads or chiefs, because then (1787 to 1805, inclusive) there were a number of companies, represented by as many agents or leaders, and all of them vied with each other in taking as many as they could before the killing was stopped. After this, in 1806 and 1807, there were no seals taken, and nearly all the people were removed to Unalaska.

In 1808 the killing was again commenced, but the people in this year were allowed to kill only on St. George. On St. Paul hunters were not permitted this year or the next.

It was not until the fourth year after this that as many as half the number previously taken were annually killed.

From this time (St. George 1808 and St. Paul 1810) up to 1822, taking fur seals progressed on both islands without economy and with slight circumspection as if there were a race in killing for the most skins. Cows were taken in drives and killed, and were also driven from the rookeries to places where they were slaughtered. (Elliott's translation.)

And Mr. Elliott, commenting on Veniaminov's zapieska, tells us that—

A study of this killing throughout the zapooska of 1834 on St. Paul Island shows that for a period of seven years, from 1835 down to the close of the season of 1841, no seals practically were killed save those that were needed for food and clothing by the natives, and that in 1835 for the first time in the history of this industry on these islands, was the vital principle of not killing female seals recognized. It will be noticed that the entry for each and every year distinctly specifies so many bachelor seals or holluschickovkotovie.

The sealing in those days was carried on all through the summer until the seals left in October or November, on account of the tedious method then in vogue of air drying the skins. This caused them in driving after the breaking up of the breeding season by the end of July, to take up at first hundreds, and thousands later on, of the females, but they never spared those cows then when they arrived in the droves on the killing grounds, prior to this date above quoted, of 1835. (Elliott's report, 1890.)

Ignoring for the moment all that has been said about the thoughtlessness and brutality of the Russian methods of driving and killing seals, and of the incalculable waste arising therefrom, which resulted in the almost total destruction of the species on two occasions, it is nevertheless true that after many years of bitter experience they did learn to do better; and when they turned the property over to the United States in 1868 there were nearly 5,000,000[1] of seals on the Pribilof Islands, and that for a period of sixteen years afterwards there was neither decrease nor diminution perceptible in those immense and valuable herds.

Dr. H. H. McIntyre, who was the general superintendent for the Alaska Commercial Company during the whole time of their twenty-year lease of the seal islands, writing, confidentially, to his employers in 1889, says:

The breeding rookeries from the beginning of the lease till 1882 or 1883 were, I believe, constantly increasing in area and population, and my observations in this direction are in accordance with those of Mr. Morgan, Mr. Webster, and others, who have been for many years with me in your service, and of the late special Treasury agent, J. M. Morton, who was on the islands from 1870 to 1880. (See H. H. McIntyre to Alaska Commercial Company, July 16, 1889, Appendix.)

And Mr. Henry W. Elliott, writing in 1881, fully corroborates the foregoing when he tells us—

There were no more seals seen here by human eyes in 1786 and 1787 than there are now in 1881, as far as all evidence goes. (Elliott's Seal Islands of Alaska, p. 66.)

[1] Grand sum total for the Pribilof Islands (season of 1873), breeding seals and young, 3,193,420. The nonbreeding seals seem nearly equal in number to that of the adult breeding seals; but, without putting them down at a figure quite so high, I may safely say that the sum total of 1,500,000, in round numbers, is a fair enumeration, and quite within bounds of fact. This makes the grand sum total of the fur-seal life on the Pribilof Islands over 4,700,000. (Elliott, The Fur-Seal Islands of Alaska, pp. 61, 62.)

It was in 1873 that Mr. Elliott estimated the number of seals on the Pribilof Islands at 4,700,000, and he again tells us in 1881 that the seals never had been more numerous than they were then; but in 1890 he found them reduced to 959,393 seals, including everything on the islands, or about one-fifth of what the herd had been in 1873.

In 1891 the Treasury agents on the seal islands were instructed to make daily visits to the rookeries during the breeding season for the purpose of noting the peculiar habits of the seals and carefully estimating their numbers at various dates on each rookery, and the highest estimate made, not including the pups, was somewhat less than half a million.

I was one of the agents who did this work in 1891, and I have spent hours and days and weeks, in turn, watching the cows from their first landing. They would often stay away from their offspring for a week at a time.

I have selected a favorable location on the Reef rookery, where I was some 30 feet above the harem and out of danger of being discovered by the seals below, and I have watched one particular pup from its birth until it was a month old; and I found that the cow left it for an hour or two only at first, then for a day, and by the end of the month for four to six days at a time.

This fact, coupled with another that I observed in 1890, convinced me that the fur seals do not digest their food as rapidly as some other animals, and consequently they can live longer without eating or drinking.

The other fact referred to is this: In 1890 we killed for the natives on St. Paul Island some 2,364 pups, after all the cows had been gone from the island for more than two weeks, and we found the stomachs of all those pups full of pure, undigested milk.

I walked over all the rookeries on St. Paul Island twice during the season of 1891, beginning at Halfway Point on July 7, and completing the second journey at Northeast Point on July 22, and the highest estimate I made of the number of seals on each was as follows:

Rookery.	Seals.	Rookery.	Seals.
Northeast Point	149,975	Middle Hill	5,150
Reef	93,150	Ketavie	5,075
Halfway Point	10,500	Lukannon	16,600
Tolstoi and Lagoon	82,650		
Zapadnie and East Zapadnie	86,200	Total, not including pups	481,350
English Bay	32,050		

This estimate was made on the basis of an average of 40 cows to each bull, and it was assumed that only one-half the bulls were in sight at any one time, or, in other words, we could not get close enough to see them without disturbing the seals, so we multiplied the number found by 2, and the product by 40, in order to obtain, approximately, the number of seals on a rookery.

It is possible, of course, that the method of computation adopted was not the best and that we probably missed the real number by many thousands, plus or minus, but for all practical purposes of comparison between the condition of the rookeries in 1891 and 1894 it is as good as perfection, for it is enough to show that no matter how many seals were there in 1891, not to exceed one-half of the number were to be found in 1894.

The same is equally true of St. George, where the rookeries, because of their relatively smaller area, show the decrease at a glance to any-

one who was on the island a few years ago, and who ever paid any attention to the seals when the rookeries were filled out to their fullest, and thousands were to be seen sporting in the waters around them.

Indeed, I do not hesitate to say that there was not to exceed 300,000 seals on St. Paul and St. George islands in August, 1894.

It is here the questions naturally arise, "What is the cause of the decrease of the seal herd? Is there a remedy; and if so, how can it be applied?"

I shall attempt to answer the questions in the order in which I have stated them, and I aim to show that all of my own views are in strict accord with those whose disinterestedness, practical knowledge, or scientific attainments warrant them in expressing views on the question at issue.

And it will be found, I think, that while we may differ in our estimates of the number of seals on the islands at any particular time or period, or that our notions about methods and management may never be exactly alike, we are all agreed that the cause of the decrease of the fur-seal herd is pelagic sealing.

Speaking for myself, after an experience of six years on the seal islands, I have no doubt that were it not for pelagic sealing the seal herd would be as numerous and as flourishing to-day as it was in 1868 or 1881, or at any other period since the discovery of the islands; nor is it at random or without long study that I say this, for I have given the subject a great deal of serious thought during the world-wide discussion of the question since 1890.

When the question of the decrease of the seal herd was first mentioned publicly as a reality, theories as numerous as the men who entertained them were offered in explanation of the cause of such decrease, and for awhile it was argued with consummate ability and persistent energy by Mr. H. W. Elliott, who was considered an authority on all that relates to fur seals, that the driving from the hauling to the killing grounds injured the young males to the extent of impotency, and thus unfitted them at maturity for service on the breeding grounds.

A mere idle guess at first, this theory was pushed to the front with energy, although, could angry personal feelings and prejudice have been eliminated from the controversy, the gentleman might have discovered what every scientist, naturalist, and impartial observer saw from the first, that so long as all the cows on the rookeries had pups beside them in season, and every mature cow killed at sea was either a nursing mother or about to become one, the theory of a scarcity of bulls could not be maintained. And after the passions and prejudices existing on the seal islands in 1890 cooled down or had ceased to exist, Mr. Elliott made an affidavit in which he says:

> After carefully examining the situation, actual records, and trustworthy testimony of men engaged in sealing with whom I have conversed, and also from knowledge of the migratory habit and peculiar circumstances of seal life, I am of the opinion that unchecked pelagic sealing is sure, speedy destruction of the Pribilof herd of fur seals; that if allowed to continue and the fleet increases in number of vessels and increased skill of hunters, even though the present modus vivendi should remain in force, it would result in the utter commercial ruin of the herd; that in order to preserve the seals from complete destruction, as a commercial factor, it is necessary that pelagic sealing should not only be prohibited in Bering Sea, but also in the North Pacific from the 1st of May until the end of October, annually. The pelagic hunters to-day kill at least 90 per cent cows (the great majority being with young, nearly ready for delivery) in the Pacific Ocean.
>
> As the physical conditions are such that it is utterly impossible to discriminate in matters of sex or age when shooting or spearing in the water, it is evident that pelagic sealing can not be regulated in the slightest degree beyond its complete prohibition within certain limits. (Elliott's affidavit, 1892; see Appendix.)

Of all the testimony collected during the preparation of the United States case for the Tribunal of Arbitration, I know of nothing clearer or more explicit than this of Mr. Elliott, and to me it seems pitiful, indeed, that one who has such a grasp of the subject, and the ability to express it so well, should have been allured for a moment from the plain path of fact to follow the ignis fatuus of theory through so many lanes and byways to the sorrow of so many of his friends and admirers.

Reading his different papers, in the light of subsequent events, their perusal makes one feel sorry, indeed, that he did not adopt Webster's views and follow his advice when the old veteran sealer conversed with him on St. George Island that 26th day of July, 1890, of which Mr. Elliott writes:

Daniel Webster is the veteran white sealer on these islands. He came to St. Paul Island in 1868, and, save the season of 1876 (then on a trip to the Russian seal islands), he has been sealing here ever since, being in charge of the work at Northeast Point annually until this summer of 1890, when he has conducted the killing on St. George.

He spoke very freely to me this afternoon while calling on me, and said there is no use trying to build these rookeries up again so as to seal here, as has been done since 1868, unless these animals are protected in the North Pacific Ocean as well as in Bering Sea; on this point the old man was very emphatic. (Elliott's report for 1890, p. 250.)

What wonder is it that Webster should have been emphatic in his remarks on pelagic sealing? For more than fifty years he has been in Bering Sea, thirty years of which have been spent among the fur seals of which he has had the practical management, and handled and killed more of them than any other living man.

A plain, blunt, rough, practical seaman, honest and patriotic to the core, he could not be wheedled into new-fangled notions or airy theories which are repugnant to good, common sense, and so he makes oath that:

My observation has been that there was an expansion of the rookeries from 1870 to 1879, which fact I attribute to the careful management of the islands by the United States Government. * * * There was never, while I have been upon the islands, any scarcity of vigorous bulls, there always being a sufficient number to fertilize all the cows coming to the islands. * * *

The season of 1891 showed that male seals had certainly been in sufficient number the year before, because the pups on the rookeries were as many as should be for the number of cows landing, the ratio being the same as in former years.

Then, too, there was a surplus of vigorous bulls in 1891 who could obtain no cows. * * * At Zapadnie, on St. George, the drive to the killing grounds is less than a mile. The seals are now being killed there instead of being driven across the island, as they were prior to 1878, when it took three days to make the journey. * * *

At Northeast Point rookery, on St. Paul Island, the longest drive is 2 miles. In former times the Russians used to drive from this rookery to St. Paul village, a distance of 12½ miles. (See Webster's affidavit, Appendix.)

Yes, let it not be forgotten for a moment that from the first taking of fur seals for their skins on the Pribilof Islands to 1868 they were driven a distance of 12½ miles—or from end to end of St. Paul Island—and that no distinction of sex was made, male and female being driven and slaughtered indiscriminately, until the almost total extinction of the species in 1834 compelled the Russian-American Company to investigate the cause of the decrease, which resulted in prohibiting the killing of females forever afterwards.

It seems that in spite of their ignorant and barbarous methods and their possible lack of scientific acumen, these Russians were practical fellows after all, for the sequel certainly shows that the plan adopted by them of saving and protecting the female was the true one. Mr. Elliott's own estimates show that from 1835 to 1881 the herds had steadily increased up to 5,000,000 seals, or up to a point beyond which it was impossible to go. Speaking of the increase of seal life, he tells us:

I am free to say that it is not within the power of human management to promote this end to the slightest appreciable degree over its present extent and condition as

it stands in the state of nature heretofore described. It can not fail to be evident, from my detailed narration of the habits and life of the fur seal on these islands during so large a part of every year, that could man have the same supervision and control over this animal during the whole season which he has at his command while they visit the land he might cause them to multiply and increase, as he would so many cattle, to an indefinite number, only limited by time and the means of feeding them. But the case in question, unfortunately, is one where the fur seal is taken, by demands for food, at least six months out of every year, far beyond the reach or even cognizance of any man, where it is all this time exposed to many known powerful and destructive natural enemies, and probably many others, equally so, unknown, which prey upon it, and, in accordance with that well-recognized law of nature, keeps this seal life at a certain number—at a figure which has been reached for ages past, and continue to be in the future, as far as they now are—their present maximum limit of increase, namely, between 4,000,000 and 5,000,000 seals, in round numbers. This law holds good everywhere throughout the animal kingdom, regulating and preserving the equilibrium of life in the state of nature. Did it not hold good these seal islands and all Bering Sea would have been literally covered, and have swarmed like the medusæ of the waters, long before the Russians discovered them. But, according to the silent testimony of the rookeries, which have been abandoned by the seals, and the noisy, emphatic assurance of those now occupied, there were no more seals when first seen here by human eyes in 1786 and 1787 than there are now in 1881, as far as all evidence goes. (Elliott's Seal Islands of Alaska, p. 66.)

What a pity it is that Mr. Elliott should have forgotten in 1890 the fact that the long drives of from 6 to 12 miles were continued by the Russians as long as they were in possession of the islands, and that from 1868 to 1881 the Americans killed, annually, 100,000 young male seals without causing diminution or decrease, and that during the entire forty-seven years, from 1834 to 1881, the herd increased to marvelous proportions in spite of the long drives and the killing of so many young males, until, as he himself says, "there were no more seals when first seen here by human eyes in 1786 and 1787 than there are now in 1881, as far as all evidence goes."

DECREASE OF SEALS—LACK OF MALE LIFE NOT THE CAUSE.

In this connection it may be well to notice some of the testimony bearing on this very question of an excess or a dearth of bulls on the breeding grounds, collected by the United States when preparing their case for submission to the Tribunal of Arbitration, where the British counsel laid such stress upon Mr. Elliott's report of 1890, with his theory of overdriving, impotency, dearth of bulls, innumerable barren females, and a consequent decrease of the seal herd as a whole.

In their report the British Bering Sea Commissioners say:

Upon the Pribilof Islands in 1891 we did not ourselves note any great abundance of barren females, but the facts in this matter would be scarcely apparent to those not intimately connected with the rookeries for more than a single year. In his official report on the condition of the islands in 1890, Mr. Elliott states that there were then 250,000 females "not bearing or not served last year and this," but he does not explain in what way this numerical estimate was arrived at. (Report of British Commissioners, sec. 433, p. 77.)

Not only did they not note "any great abundance of barren females," but it is an open question whether they noted any, for the fact is there were not any such animals there to be seen, but they gladly quote Mr. Elliott's story of 1890 about the 250,000 barren females which he observed on the islands.

There was not a single day of the breeding season of 1891 when some of the four Treasury agents were not out on the rookeries making careful examination of the condition of seal life thereon, and, although I was one of the four, I have yet to hear the first word from any of them, or from any one else who has ever been on a rookery (excepting Mr. *Elliott), about barren females.*

It has been amply demonstrated by different individuals, and in many ways, that there was not a shadow of truth in Mr. Elliott's theory, and many of his own most intimate friends and fellow-workers, who are well qualified to speak as scientists on the seal question, are among the foremost of those who flatly contradict him on that point.

Prof. B. W. Evermann, of the United States Fish Commission, visited St. Paul Island while I was there in 1892, and he very carefully inspected the seals on many of the rookeries, beginning July 18 and ending on the 31st, and here is what he found:

LUKANNON ROOKERY, *July 19, from 1.30 to 4 p. m.*

Harems.	Bulls.	Cows.	Pups.	Harems.	Bulls.	Cows.	Pups.
1	1	7	26	9	1	5	3
2	1	6	60	10	1	12	20
3	1	4	20	11	1	4	5
4	1	2	5	12	1	5	15
5	1	27	12	13	1	6	30
6	1	10	15				
7	1	2	0	Total	13	90	211
8	1	0	0				

REEF ROOKERY, *July 20, p. m.*

* * * Many quite large bulls were seen among the bachelors, and there is no doubt in my mind but that the number of available bulls is considerably in excess of the number necessary to serve the cows.

NORTHEAST POINT ROOKERY, *July 22.*

Several hours in the middle of the day were spent in examining this rookery. * * *

Just west of this is a bunch of about 10 good-sized bulls that had no cows about them at all. These were not old, superannuated bulls, but young, vigorous ones, and undoubtedly well able to maintain harems were there a greater number of cows. This and numerous other similar sights convince me that there are even now a good many more bulls than are necessary to serve the cows. (Notes on the fur seal, by B. W. Evermann, Counter Case, United States, p. 264.)

And C. H. Townsend, of the United States Fish Commission, who has had many years practical experience among fur seals, afloat and ashore, and who was on duty in Bering Sea during the summer of 1892, makes affidavit as follows:

As already stated above, I was attached to the steamer *Corwin* during the past summer, and I made all the examinations of the stomachs of the seals referred to in Captain Hooper's report, covering in all 33 seals. * * * These seals were taken on the 2d day of August, 1892, at a distance of about 175 miles from the islands. * * *

From the fact that among the females thus taken and examined there were found mostly nursing cows, with a small number of virgin cows, it is reasonable to conclude that there are practically no barren females swimming about in the sea unattached to the islands, or that at any rate, if such seals exist, they are rarely, if ever, taken. In all my experience I never saw anything to lead me to the conclusion that there is such a thing as a barren female. In the case of the virgin cows, a careful examination of the uterus proved them to be too immature for conception. (C. H. Townsend; see affidavit in Appendix.)

The testimony of Professor Evermann and Mr. Townsend is a fair sample of that given by naturalists generally, and it is doubly valuable in this instance, because it comes from personal friends of Mr. Elliott, and from friends who rather inclined to his theory until they had opportunity to investigate for themselves, and to demonstrate to their own and the world's satisfaction that there never was an impotent bull or a barren cow seen on the breeding grounds or rookeries of the Pribilof Islands or in the waters adjacent thereto.

Additional testimony of those who have had experience with the fur seals, and whose practical knowledge of the whole subject of seal life, its growth, *expansion, and decay,* and the causes thereof, entitles them

to a hearing on the point at issue, is most respectfully submitted to the earnest consideration of all who are interested in the perpetuation of the Alaskan fur seal.

Mr. Joseph Stanley-Brown, whoalso was on the seal islands in 1891–92, testifies as follows:

No intelligent observer would be so bold as to assert that during the season of 1892 there was not an abundance of males of competent virility, despite the occurrence of occasional large harems. The accompanying photographs[1] show that even at the height of the season, and just previous to the disintegration of the breeding grounds, there were, unsupplied with cows, old males which had taken their stand, and from which I was unable to drive them with stones.

I should have been extremely glad to have been able to note a great many more large harems, but the work of the pelagic hunter among the females has been so effective, that the average size of the harems is growing smaller and smaller, while the number of idle bulls is steadily increasing.

The abundance of male life for service upon the rookeries was evidenced by the number of young bulls which continually sought lodgment upon the breeding grounds.

It is highly improbable that the rookeries have ever sustained any injury from insufficient service on the part of the males, for any male that did not possess sufficient vitality for sustained potency would inevitably be deprived of his harem by either his neighbor or some lusty young aspirant, and this dispossession would be rendered the more certain by the disloyalty of his consorts.

The seal being polygamous in habit, each male being able to provide for a harem averaging twenty or thirty members, and the proportion of male to female born being equal, there must inevitably be left a reserve of young immature males, the death of a certain proportion of which could not in anyway affect the annual supply coming from the breeding grounds. These conditions existing, the Government has permitted the taking, with three exceptions up to 1890, of a quota of about 100,000 of these young male seals annually. When the abundance of seal life, as evidenced by the areas formerly occupied by seals, is considered, I do not believe that this could account for or play any appreciable part in the diminution of the herd. * * *

From my knowledge of the vitality of seals, I do not believe any injury ever occurred to the reproductive powers of the male seals from redriving that would retard the increase of the herd, and that the driving of 1890 necessary to secure about 22,000 skins could not have caused nor played any important part in the decrease that was apparent on every hand last year.

Karp Buterin, native chief of St. Paul Island (see Appendix):

Plenty of bulls all the time on the rookeries, and plenty bulls have no cows. I never seen a 3-year-old cow without a pup in July; only 2-year-olds have no pups.

H. N. Clark, local agent for lessees:

I never noticed any disproportion of the sexes that would lead me to suspect that the bull seals were too few, nor more than an occasional barren cow. These latter were so few as to excite no remark, but if any such disproportion did in fact exist in 1888 and in 1889, it was the fault of those who killed them at sea, because it never occurred at all until the marine hunters became numerous and aggressive. I mention this matter here, because since I left the island I have heard it asserted that the mismanagement there caused the decrease of seal life. The management there was just such as I would follow if all the seals belonged to me.

C. L. Fowler, local agent for lessees:

I never saw any impotent bulls on the rookeries, and do not believe there ever was any, unless it was the result of age; nor do I believe that young male seals were ever rendered impotent by driving. There has always been a plenty of bulls on the rookeries for breeding purposes ever since I have been on the islands.

John Fratis, native sealer, St. Paul Island:

I never knew of a time when there were not plenty of bulls for all the cows, and I never saw a cow seal, except a 2-year-old, without a pup by her side in the proper season. I never heard tell of an impotent bull seal, nor do I believe there is such a thing, excepting the very old and feeble or badly wounded ones. I have seen hundreds of idle vigorous bulls upon the rookeries, and there were no cows for them. I saw many such bulls last year.

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[1] Not given here.

H. N. Glidden, Treasury agent:

During these years there was always a sufficiency of vigorous male life to serve all the female seals which came to the islands, and certainly during this period seal life was not affected by any deficiency of males.

Alex. Hansson:

The orders of the boss of the gang in which I worked in 1888 and 1889, under the management of the Alaska Commercial Company, were not to kill the 5-year-old bulls, because they were, he said, needed on the rookeries.

Aggei Kushen, native sealer, St. Paul Island:

We noticed idle, vigorous bulls on the breeding rookeries, because of the scarcity of cows, and I have noticed that the cows have decreased steadily every year since 1886, but more particularly so in 1888, 1889, 1890, and 1891.

H. H. McIntyre, general superintendent Alaska Commercial Company:

And I am satisfied a sufficient number of males was always reserved for future breeding purposes.

That during the twenty years I was upon said Pribilof Islands as general agent of said Alaska Commercial Company there were reserved upon the breeding rookeries upon said islands sufficient vigorous bulls to serve the number of females upon said rookeries; that while I was located upon said islands there was at all times a greater number of adult male seals than was necessary to fertilize the females who hauled upon said rookeries, and that there was no time when there were not vigorous bulls on the rookeries who were unable to obtain female consorts.

So well was this necessity for reserving sufficient mature male life recognized that when in 1887, 1888, and 1889 the depleted rookeries (depleted from causes that will be explained further on) would not furnish the quota of 100,000 large skins, 2 and 3 year-old male seals were taken to make up the quota in preference to trenching upon this reserve of maturer male life.

The policy of the Alaska Commercial Company during the whole period of its lease was, as might be naturally expected, to obtain the best possible skins for market and at the same time preserve the rookeries against injury, for it was not only in their interests to be able to secure every year, until the expiration of the lease, the full quota allowed by law, but they confidently expected, by reason of their good management of the business and faithful fulfillment of every obligation to the Government, to obtain the franchise for a second term. I was, therefore, always alert to see that the due proportion of breeding males of serviceable age was allowed to return to the rookeries. This was a comparatively easy task prior to 1882, but became from year to year more difficult as the seals decreased. No very explicit orders were given to the bosses upon this point until 1888, because the bulls seemed to be plentiful enough, and because it was easier to kill and skin a small seal than a large one, and the natives were inclined, for this reason, to allow the large ones to escape; but in 1888 and 1889 there was such a marked scarcity of breeding males upon the rookeries that I gave strict orders to spare all 5-year-old bulls and confine the killing to smaller animals.

Anton Melovedoff, native chief of St. Paul Island:

I have never known or heard tell of a time when there were not bulls enough and to spare on the breeding rookeries. I never saw a cow 3 years old or over in August without a pup by her side. The only cows on a breeding rookery without pups are the virgin cows who have come there for the first time. I never went onto a rookery in the breeding season when I could not have counted plenty of the idle, vigorous bulls who had no cows.

Talk of epidemics among seals and of impotent bulls on the rookeries, but those who have spent a lifetime on the seal islands and whose business and duty it has been to guard and observe them have no knowledge of the existence of either. An impotent bull dare not attempt to go on a rookery even had he a desire to do so. Excepting the extremely old and feeble, I have never seen a bull that was impotent.

Simeon Melovidov, native school teacher, St. Paul Island:

Nor is there any shadow of fact for the idle statement made from time to time about a dearth of bulls on the rookeries or of impotent bulls.

I have talked to the old men of our people, men who can remember back over fifty years, and not one of them knows of a time when there was not plenty of bulls, and more than enough on the breeding rookeries, and no one here ever heard of an impotent bull. * * * It has been said that cows are barren sometimes because of the

dearth of bulls, but such is not the case at all, for the only cows on the breeding rookeries in July or August without pups are the 2-year-olds (virgins), which have come on the rookeries for the first time.

T. F. Morgan, foreman on Pribilof Islands for Alaska Commercial Company:

Despite the lowering on the standard weight of skins, care was taken annually on St. George that the residue of available male breeders was sufficient for the needs of the rookeries, and instructions to that effect were given to the assistants by the superintendent of the Alaska Commercial Company. In this we were aided by the inaccessible character of some of the hauling grounds.

I. H. Moulton, Treasury agent:

During these years there were always a sufficiency of male seals for breeding purposes, and in every year I saw great numbers of idle, vigorous bulls about and back of the breeding grounds which were unable to obtain females.

S. R. Nettleton, Treasury agent:

During my stay on the islands I have never seen a time during the breeding season when there has not been a number of large, vigorous young bulls hanging about the borders of the rookeries watching for an opportunity to get a position of their own.

L. A. Noyes, M. D. (see affidavit in Appendix):

The "dearth of bulls theory" has been thoroughly and impartially investigated without discovering a cow of 3 years old or over on the rookeries without a pup by her side at the proper time, and I am convinced that the virgin females coming onto the rookeries for the first time are the only ones to be found there without pups.

The investigation established the additional fact that hundreds of vigorous bulls were lying idle on the rookeries without cows, and many others had to content themselves with only one or two.

The theory of "impotency of the bull through overdriving" while young was also found to be untrue, and it was shown that after 1878 all long drives on both islands had been abolished, and instead of driving seals from 6 to 12 miles, as was done in Russian times, none were driven to exceed 2½ miles.

It is also a well-known fact that none but the physically strong and aggressive bulls can hold a position on the rookeries, and that a weak or an impotent animal has no desire to go there.

J. C. Redpath, lessee's agent at the seal islands (see affidavit in Appendix):

A dearth of bulls on the breeding rookeries was a pet theory of one or two transient visitors, but it only needed a thorough investigation of the condition of the rookeries to convince the most skeptical that there were plenty of bulls, and to spare, and that hardly a cow could be found on the rookeries without a pup at her side.

For five years I have given this particular subject my most earnest attention, and every succeeding year's experience has convinced me that there is not and never was a dearth of bulls. The theory of impotency of the young bulls because of overdriving when young is not worthy of consideration by any sane or honest man who has ever seen a bull seal on a breeding rookery; and as I have already answered the question of overdriving, I will only add here that no young bull ever goes upon the breeding rookery until he is able to fight his way in, and an impotent bull has no desire to fight, nor could he win a position on the rookery were he to attempt it. The man is not alive who over saw a 6 or 7 year old seal impotent.

B. F. Scribner, Treasury agent:

There was always in both seasons a great sufficiency of adult males to serve all the females coming to the island, and I noticed each year a great number of idle, vigorous bulls behind the breeding grounds who could not obtain consorts, and one of these extra bulls always took the place of an old male unable longer to be of use for breeding purposes.

Daniel Webster, lessees' agent at the seal islands (see affidavit in Appendix):

There was never while I have been on the islands any scarcity of vigorous bulls, there always being a sufficient number to fertilize all the cows coming to the islands. It was always borne in mind by those on the islands that a sufficient number of males must be preserved for breeding purposes, and this accounts partly for the lowering of the standard weight of skins in 1888. The season of 1891 showed that male seals had certainly been in sufficient number the year before, because the pups on the rookeries were as many as should be for the number of cows landing, the ratio being the same as in former years. Then, too, there was a surplus of vigorous bulls in 1891 who could obtain no cows.

W. H. Williams, Treasury agent:

During the season of 1891 nearly every mature female coming upon the rookeries gave birth to a young seal, and there was great abundance of males of sufficient age to again go upon the breeding grounds that year, as was shown by the inability of large numbers of them to secure more than one to five cows each, while quite a number could secure none at all. My investigation confirms what has been so often said by others who have reported upon this subject, and that is that the Pribilof Islands are the great breeding grounds of the fur seals, and that they can be reared in great numbers on said islands, and at the same time, under wise and judicious restrictions, a certain number of male seals can be killed from year to year without injury to the breeding herds, and their skins disposed of for commercial purposes, thereby building up and perpetuating this great industry indefinitely, and thus adding to the wealth, happiness, and comfort of the civilized world, while, on the other hand, if pelagic hunting of this animal is to continue, and the barbarous practice of killing the mother seal with her unborn young, or when she is rearing it, is to go on, it will be but a very short time before the fur seal will practically become extinct and this valuable industry will pass out of existence.

There is the testimony of twenty men who have been on the seal islands for years, some of them being born and raised there, and several of them having had from fifteen to twenty-five years experience, while every one of them have been directly interested in the business either for the Government or for the lessees, and two of them, at least, are naturalists of repute, who could not be induced under any circumstances to vary from the truth and facts as they found them.

I have made the quotations from the "Case of the United States," as it was prepared for the United States counsel before the Tribunal of Arbitration, and I could quote many others to the same purpose were it necessary.

Being personally acquainted with most of the gentlemen named, and knowing the truth of their several statements, I deem it quite unnecessary to add another name from the scores at hand.

DEAD PUPS.

Assuming then that the "dearth of bulls" theory has been disproved and disposed of, we will now take up the subject of dead pups on the islands, and show that until the work of the pelagic sealer in Bering Sea became an industry of some importance, dead pups by the thousands, or by the acre, were unheard of and unknown; but as the pelagic sealing industry flourished and grew, and the fleet of schooners multiplied and doubled in numbers from year to year, the number of dead pups was found to increase on the rookeries in the same proportion.

That this proposition has been, and may still be, denied by the interested ones; that men may be found who will swear to the contrary is already conceded by me, for I have met them who did it; but, in every instance, they were men whose whole interest, capital, and labor were engaged in the business of seal hunting, and who would follow a seal wherever it went, on land or water, unless the strong hand of a power superior to their own intervened to prevent them.

Another class, in which are to be found men of the highest intelligence and personal honor, argue that possibly a stampede or an epidemic, or something else of which we may not be aware, is at the bottom of the trouble.

Of the latter class are the British Bering Sea Commissioners, and I quote them in full:

(L)—MORTALITY OF YOUNG SEALS IN 1891.

344. In the season of 1891 considerable numbers of dead pups were found in certain places upon the rookery grounds or in their vicinity and various hypotheses were advanced to account for this unusual mortality. As some of these have special bearings on the general question of seal preservation, it may be well to devote a few words to this particular subject.

345. In order to exhibit the circumstances surrounding this fact and to arrive at a probable explanation of its true meaning, it will be necessary in the first instance to give in summarized form the observations and notes bearing upon it made on the ground by ourselves.

346. When visiting Tolstoi rookery, St. Paul Island, on the 29th of July, we observed and called attention to several hundred dead pups which lay scattered about in a limited area on a smooth slope near the northern or inland end of the rookery ground and at some little distance from the shore. The bodies were partly decomposed and appeared to have lain where found for a week or more, which would place the actual date of the death of the pups, say, between the 15th and 20th of July. Neither the Government agent who was with us, nor the natives forming our boat's crew at the time, would at first believe that the objects seen on the rookery were dead pups, affirming that they were stones; but when it became clearly apparent that this was not the case they could suggest as causes of death only overrunning by bulls or surf along the shore, neither one of which appeared to us at the time to be satisfactory. Mr. D. Webster, interrogated on the subject some days later on St. George Island, offered merely the same suggestions, but a few days still later, both whites and natives on the islands were found to have developed quite other opinions and to be ready to attribute the deaths to the operations of pelagic sealers killing mothers while off at sea and leading to the death of pups from starvation consequent on such killing.

347. Believing the matter to be one of considerable importance, however, it might be explained, particular attention was paid to it on subsequent visits to rookeries. On the 31st of July and the 1st of August the rookeries of St. George were inspected, but no similar appearances were found, nor was anything of the same kind again seen till the 4th of August, on Polavina rookery, St. Paul Island, where, near the southern extremity of the rookery, several hundred dead pups were again found by us, here also covering an area of limited size, which we were able to examine carefully without disturbing the breeding seals. It was estimated that the pups here found had died between ten days and two weeks before, which would place the actual date of death at about the same time with that of those first referred to.

348. On the following day the extensive rookeries of Northeast Point were visited and examined, but very few dead pups were anywhere seen. Mr. Fowler, in charge of these rookeries for the company, was specially questioned on this point, and fully confirmed the negative observations made by ourselves at the time. It may here be mentioned that the vicinity of Northeast Point had been the principal and only notable locality from which, up to this date, sealing vessels had been sighted in the offing or had been reported as shooting seals within hearing of the shore.

349. On the 19th of August, after a cruise to the northward of about a fortnight's duration, we returned to St. Paul and on the same day revisited Tolstoi rookery. On this occasion the dead pups previously noted were still to be seen, but the bodies were flattened out and more or less covered with sand by the continuous movement of the living seals. There were, however, on and near the same place, and particularly near the angle between Tolstoi rookery and the sands of English Bay, many more dead pups, larger in size than those first noted and scarcely distinguishable in this respect from the living pups, which were then "podded out" in great numbers in the immediate neighborhood. Messrs. Fowler and Murray, who accompanied us on this occasion, admitted the mortality to be local, and the first-named gentleman stated that in his long experience he had never seen anything of the kind before, and suggested that the mothers from this special locality might have gone to some particular "feeding bank" and have there been killed together by sea sealers. On the same day we visited the Reef rookery again, and a search was made there for dead pups, which resulted in the discovery of some of approximately the same size with those last mentioned, but probably not more than an eighth, and certainly not more than one-fourth in number as compared with the inner end of the Tolstoi rookery ground, and proportionately in both cases to the number of living pups.

350. While making a third inspection of the St. Paul rookeries in September, on the 15th of that month, the Reef and Northeast Point rookeries were again specially examined. The rookery ground of the southeastern side of the Reef Point was carefully inspected, area by area, with field glasses, from the various rocky points which overlook it, and from which the whole field is visible in detail save certain narrow, stony slopes close to the sea edge, where dead pups might have been hidden from view among the bowlders. Subsequently, the northeastern sloping ground, named Garbotch on the plans, being at that date merely occupied by scattered groups of seals, was walked over. The result of the inspection was to show that there were on the southeast side a few dozen dead pups at the most in sight, while on the opposite side perhaps a hundred in all were found in the area gone over, being, probably, the same with those seen here the previous month, and in number or contiguity not in any way comparable with those seen at the inner end of Tolstoi.

351. On the same day a final visit was made to the Northeast Point rookeries, then in charge of three natives only. Two of these men went over the ground with us

and were questioned on various subjects, including that of dead pups, through our Aleut interpreter. They would not admit that they had seen any great number of dead pups on the northeast part this season, and did not seem to be in any way impressed with the idea that there had been any unusual mortality there. The ground to the north of Hutchinson Hill was, however, carefully examined by us from the slopes of the hill, and a few dead pups were made out there. Again, at a place to the north of Sea Lion Neck of the plans, and beyond the sand beach upon which holluschickie generally haul out, a slow advance was made among a large herd of females and pups, though part of these were necessarily driven off the ground in so doing. An occupied area of rookery was thus walked over, and the dead pups which appeared at this spot to be unusually abundant were counted with approximate accuracy. A very few were found scattered over the general surface, but on approaching the shore edge an area of about 20,000 square feet was noted, in which about 100 dead pups were assembled. Some of these lay within reach of the surf at high tide. Most appeared to have been dead for at least ten days, and several were broken up and mangled by the movement of the living seals on and about them. This particular locality showed a greater number of dead pups to area than any other seen at this time either on the Northeast or Reef rookeries, but in number in no respect comparable to that previously noted at Tolstoi, or even to that on the south part of Polavina.

352. We were informed on this our last visit to the Pribilof Islands that subsequent to our discovery of and comments upon the dead pups at the two last-mentioned places, the attention of Mr. J. Stanley Brown (who was engaged during the summer in making a special examination of the rookeries for the United States Government) was called to the circumstance, and that he undertook some further examination of it, of which the result will no doubt eventually be rendered available. Dr. Acland, who had just been installed as medical officer on St. Paul, also told us that he had, within a few days, examined the bodies of six of the pups from Tolstoi, and that though rather too much decomposed for correct autopsy, he had been unable to find any signs of disease, but that all these examined were very thin and without food in the stomachs.

353. It may be noted here that the carcasses thus examined must have been those of pups which had died in the month of September, or when no sealing schooners remained in Bering Sea.

354. The body of a pup found by us on the Northeast rookery on the 5th of August, which was still undecomposed, was preserved in alcohol, and has since been submitted to Dr. A. Gunther, F. R. S., of the British Museum, who kindly offered to make an examination of it. This is quoted at length in Appendix (D). The stomach was found to contain no food. The body was well nourished, with a fair amount of fat in the subcutaneous tissue, but no fat about the abdominal organs. The lungs and windpipe were found in an inflammatory condition. Respecting the actual cause of death, Dr. Gunther says: "Both the absence of food as well as the condition of the respiratory organs are sufficient to account for the death of the animal; but which of the two was the primary cause, preceding the other, it is impossible to say."

355. It would be inappropriate here to enter into any lengthened discussion of the bearings of the above facts on the methods of sealing at sea; but as, after the tentative adoption of various hypotheses, the mortality of the young seals was with a remarkable unanimity attributed to pelagic sealing by the gentlemen in any way connected with the breeding islands, and as it has since been widely and consistently advertised in the press as a further and striking proof of the destructiveness of pelagic sealing, it may be permissible to allude to a few cogent reasons, because of which the subject seems at least to require consideration of a much more careful and searching kind:

(1) The death of so many young seals on the islands in 1891 was wholly exceptional and unprecedented, and it occurred in the very season during which, in accordance with the modus vivendi, every effort was being made to drive all pelagic sealers from Bering Sea. Those familiar with the islands were evidently puzzled and surprised when their attention was first drawn to it, and were for some time in doubt as to what cause it might be attributed.

(2) The explanation at length very unanimously concurred in by them, viz, that the young had died because their mothers had been killed at sea, rests wholly upon the assumption that each female will suckle only its own young one, an assumption which appears to be at least very doubtful, and which has already been discussed.

(3) The mortality was at first local, and though later a certain number of dead pups were found on various rookeries examined, nothing of a character comparable with that on Tolstoi rookery was discovered.

(4) The mortality first observed on Tolstoi and Polavina was at too early a date to enable it to be reasonably explained by the killing of mothers at sea. It occurred, as already explained, about the 15th or 20th of July, at a time at which, according to the generally accepted dates as well as our own observations in 1891, the females

had not begun to leave the rookeries in large numbers, or, when leaving them, to do no more than swim or play about close to the shore. It has already been stated that Bryant gives the 25th of July as the opening of the period in which the females begin to leave the rookeries. Maynard states that the bulls, cows, and pups remain within the rookery limits to the same date, while Elliott places this change in the rookeries between the end of July and the 5th and 8th of August. It is, moreover, acknowledged by the best authorities that the dates in seal life upon the islands have become later rather than earlier in recent years, as compared with those in which the dates above cited were ascertained. In the case of the death of pups after the middle of August, it might be an admissible hypothesis that the mothers had been killed at sea and that subsequently to such killing the young had had time to starve to death, but not at dates earlier than this. In the present case the mortality began long before that date, and it seems probable that the deaths which occurred later must be explained by the same cause, whatever it may have been, extending from the original localities and becoming more general.

356. The causes to which the mortality noted may be attributed with greatest probability are the following, but the evidence at present at disposal scarcely admits of a final attribution to one or other of them. If, however, the examination made by Dr. Acland of several of the carcasses be considered as indicative of the state of the whole, one of the two first is likely to afford the correct explanation:

(*a*) It is well known that in consequence of the decreased number of killables found on the hauling grounds in late years it has been found necessary to collect these close to and even on the edges of the breeding rookeries, and that it has thus been impossible to avoid the collection and driving to the killing grounds, with the killables, of all sorts of seals not required, including seecatchie and females. It is also known that the driving and killing in the early part of the season of 1891 was pushed with unwonted energy, taking into consideration the reduced number of seals, and it appears to be quite possible that the females thus driven from their young, though afterwards turned away from the killing grounds in an exhausted and thoroughly terrified state, never afterwards found their way back to their original breeding places, but either went off to sea or landed elsewhere. The places where the greatest number of dead pups were first seen on Tolstoi and Polavina were just those from the immediate vicinity of which drives were most frequently made.

(*b*) The appearances, indicating a local beginning and greatest intensity of mortality, with its subsequent extension to greater areas, might reasonably be explained by the origination and transmission of some disease of an epidemic character.

(*c*) The circumstances where the mortality was observed to be greatest appeared to be such as to be explicable by a panic and stampede, with consequent overrunning of the young; but, if so, such stampedes must have occurred more than once. They might not improbably have resulted from attempts to collect drives too near the breeding rookeries.

(*d*) It is entirely within the bounds of probability that raiders may have landed on at least Tolstoi and Polavina rookeries without anyone upon the islands becoming cognizant of the fact. Females would in such a case be killed in greatest numbers, for these occupy the stations most easily got at from the seaside, and the killing upon the rookery ground would also unavoidably have resulted in stampeding large numbers of seals of all classes. (Report of British Bering Sea Commissioners, pp. 61–64.)

A brief review of the salient points of the foregoing will not be out of place at the present time, even though the Tribunal of Arbitration, before which they were considered and upon which they exerted an influence perhaps, is now a thing of the past.

In section 346 they tell us:

We observed and called attention to several hundred dead pups. * * * The bodies were partly decomposed and appeared to have lain where found for a week or more. * * * Neither the Government agent who was with us nor the natives forming our boat's crew at the time would at first believe that the objects seen on the rookery were dead pups, affirming that they were stones.

Now, all that seems plain enough, but does it not sound rather ludicrous, to say the least, when it is alleged by any man that a boat's crew of native sealers, whose life work is the handling of seals, could not tell the difference between the decomposed carcass of a pup seal and a stone, when those who had never been to the seal islands before saw the difference at a glance? The commissioners continue:

The bodies were partly decomposed and appeared to have lain where found for a week or more.

To anyone not knowing the real conditions existing at Tolstoi rookery on that particular 29th of July, the words quoted would imply that the men who "found" the bodies of the "decomposed pups" were walking around on the rookery, but the truth is we did not land on Tolstoi rookery at all during the 29th of July, nor did we find any dead pups that had been lying there for a week or more, nor did we find any.

As I was the Government agent who accompanied the commissioners and was in charge of the boat's crew of natives, I affirm that we sailed from the village landing to Zapadnie or Southwest Bay, where we landed and walked on the rookery without seeing any dead pups; and afterwards we sailed from Zapadnie and followed the trend of the shore all around English Bay and over to Tolstoi, without making a landing till we arrived home at the village. It was while we were passing Tolstoi someone asked the question, "What is that up there on the side-hill?" Field glasses were used by several of the men, and some said the objects pointed at were dead seals, some said "dead pups," and some claimed they were not certain whether they were bones or rocks.

Let it be borne in mind that we were looking at a very steep hill, broken and rocky; that we were from 200 to 300 yards out from land, and in a boat that was on a choppy sea, and therefore in constant motion, and it will be readily understood why the native sealers were so dull about dead pups on Tolstoi rookery.

In section 349 they tell us that—

> On the 19th of August * * * we returned to St. Paul, and on the same day revisited Tolstoi rookery. * * * Messrs. Fowler and Murray, who accompanied us on this occasion, admitted the mortality to be local, and the first-named gentleman stated that in his long experience he had never seen anything of the kind before, and suggested that the mothers from this special locality might have gone to some particular "feeding bank" and have been killed together by sea sealers.

Without attempting to enter into an argument of what we actually saw and said that day on Tolstoi rookery, I will say that it is true we, Fowler, Murray, and Barnes, were astonished at the number of dead pups we beheld, a number far exceeding anything we had ever seen before, and it was in that spirit of astonishment that Mr. Fowler said he never saw the like, meaning that he never saw so many at one time, which is very easily accounted for now by the well-known fact that in no year previous to 1891 were so many seals killed and taken by pelagic sealers, as may be seen by a reference to the following table:

Table of pelagic catch from 1868 to 1894, both inclusive, from the best authorities and sources of information, revised and corrected to date.

Year.	Number.	Year.	Number.	Year.	Number.	Year.	Number.
1868	4,367	1875	5,033	1882	15,551	1889	43,158
1869	4,430	1876	5,515	1883	16,585	1890	51,814
1870	8,686	1877	5,210	1884	17,183	1891	69,788
1871	16,911	1878	5,544	1885	24,960	1892	73,394
1872	5,336	1879	8,867	1886	38,994	1893	109,000
1873	5,229	1880	8,910	1887	46,628	1894	142,000
1874	5,873	1881	10,382	1888	26,915		

The real number taken in 1891 was 78,000, but only those actually sold in London are counted here, and, as there is no doubt that from 80 to 90 per cent of the total catch were female seals, it is not to be wondered at that from 20,000 to 30,000 pups were found dead on the rookeries in the fall of that year.

What Mr. Murray did say on that memorable 19th of August, 1891, is a matter of record, as follows:

Accompanied by Agent Barnes, Mr. Fowler, of the North American Commercial Company, and by the British commissioners, I visited Tolstoi rookery on August 19, and we found thousands of dead pups, covering a space of about 5 acres, and their mothers had disappeared. Dr. Dawson, one of the commissioners, took kodak views of the place, and when he asked me what I thought was the cause of their death, I answered, "Their mothers have been killed at sea."

Since I left St. Paul Island I have received a letter from Agent Barnes, in which he says: "You remember the appearance of Tolstoi? I visited Halfway Point along with Mr. Fowler and found the same state of affairs, or worse; and those who have been to Northeast Point say it is still worse there."

Bearing in mind that Northeast Point is the largest rookery in the world, it is no exaggeration to say that between 20,000 and 30,000 pups are lying dead at St. Paul Island whose mothers were slaughtered by sealing schooners in the open sea and the pups left to starve upon the rookeries.

The theory of an occasional epidemic among the seals has been broached, and plausible arguments advanced to prove that the decrease in seal life can be accounted for without blaming the sealing schooners, but as the "oldest inhabitant" on the islands has no recollection of anything of the sort, and as no one ever saw a dozen dead cows on any rookery, it is safe to say there is no foundation for or truth in the epidemic theory. (Murray's Report, 1891, Senate Ex. Doc. No. 107, Fifty-second Congress, second session.)

It does not seem possible that the person who wrote in 1891 the report from which the foregoing has been copied could have "admitted the mortality to be local," and, as a matter of fact, he never did. On the contrary, because of a thirty months' continuous residence on the islands and a personal acquaintance and very intimate and friendly relations with every person on both, I was well aware of the annual increase of dead pups on the rookeries from the time of the first-confirmed shrinkage of the seal herd in 1886. That the terrible sight which met our gaze on Tolstoi rookery should have caused exclamations of surprise from all of us, who knew its real meaning, is not to be wondered at, I think, for the starved carcasses emphasized the fact that in spite of the efforts of the fleets of the United States and of Great Britain, the pelagic sealers' deadly work was being done with an energy and success beyond all preceding seasons, and that unless some other mode of protection could be devised by the nations directly interested the seal herd would soon be annihilated.

In section 362 the commissioners say:

Dr. Acland, who had just been installed as medical officer on St. Paul, also told us that he had within a few days examined the bodies of six of the pups from Tolstoi; * * * he had been unable to find any signs of disease, but that all those examined were very thin and without food in the stomachs.

Dr. Akerly it was who visited the rookeries and examined the dead pups, and whose affidavit will be found in the Appendix.

Commenting on section 255, they say:

(1) The death of so many young seals on the islands in 1891 was wholly exceptional and unprecedented, and it occurred in the very season which, in accordance with the modus vivendi, every effort was being made to drive all pelagic sealers from Bering Sea. Those familiar with the islands were evidently puzzled and surprised when their attention was first drawn to it, and were for some time in doubt as to what cause it might be attributed.

It is true we were rather astonished at the number of dead pups on the rookeries, and being aware "that every effort was being made to prevent pelagic sealing," we were puzzled to account for it at the time, for we knew of no cause other than the killing of the females at sea by which it could be accounted for.

Subsequently, however, we learned of the unprecedented catch made that season by the sealing fleet, and, naturally, we concluded that our

conjectures were confirmed. Nor have I had any information since sufficiently reliable to cause a change of opinion.

(3) The mortality was at first local, and though later a certain number of dead pups were found at various rookeries examined, nothing of a character comparable with that on Tolstoi rookery was discovered.

Treasury Agent Barnes, who was on St. Paul Island long after the commissioners left in the fall, is my authority for saying that the "same state of affairs or worse was found later on Polavina and on Northeast Point," the two rookeries visited by him.

(4) The mortality first observed on Tolstoi and Polavina was at too early a date to enable it to be reasonably explained by the killing of mothers at sea. It occurred, as already explained, about the 15th or 20th of July, at a time at which, according to the generally accepted dates, as well as our own observations in 1891, the females had not begun to leave the rookeries in large numbers, or when leaving them, to do more than swim or play about close to the shore.

As already shown, there were no dead pups seen—most certainly nothing worth noting—until August 19.

As the commissioners did not land on either of the seal islands till the latter end of July—about the 28th, if I remember rightly—I can not see how they could have personally observed the movements of the females or the condition of the breeding grounds about the 15th or 20th of July.

Section 356. (a) It is well known that in consequence of the decreased number of killables found on the hauling grounds in late years, it has been found necessary to collect these close to and even on the edges of the breeding rookeries. * * *

It is also known that the driving and killing in the early part of the season of 1891 was pushed with unwonted energy, * * * and it appears to be quite possible that the females thus driven from their young, though afterwards turned away from the killing grounds in an exhausted and thoroughly terrified state, never afterwards found their way back to their original breeding places, but either went off to sea or landed elsewhere. The places where the greatest number of dead pups were first seen on Tolstoi and Polavina were just those from the immediate vicinity of which drives were most frequently made.

The reading of the above quotation staggers one who ever had experience on a rookery or a killing ground.

The "it is well known," is surely unworthy of the commissioners.

Which of the men on the islands ever said such a thing? Whoever said that seals were collected close up to the breeding grounds? No man who ever made a drive or saw one made. Who is responsible for the story of the driving of females in the early part of the season of 1891? No sealer, of course, for he would know that there are no females on the rookeries in the early part of the season.

The commissioners found more dead pups on Tolstoi than on any other rookery, and they endeavor to show that collecting and driving of seals from near the breeding rookeries and the consequent taking of some females or the disturbance of the herds caused the death of the pups.

The island records of all the drives made on St. Paul Island in 1891 are at hand, and I will produce a copy for the purpose of showing that no drives whatever were made from either Tolstoi or Polavina during the year 1891!

And yet the commissioners, who were supposed to make an impartial report, say:

The places where the greatest number of dead pups were first seen on Tolstoi and Polavina were just those from the immediate vicinity of which drives were most frequently made.

The fact is, as may be seen by consulting the records for 1890-91, in the Appendix, that no drives were made from Polavina since July 13,

nor from Tolstoi since July 20, 1890; so that, instead of being the places most driven from, they are the places not driven from at all in 1891.

The following table, from the official records of the Treasury Department, gives all of the killings for food and for skins (quota and modus vivendi) from the close of the season July 20, 1890, to the close of the season August 10, 1891:

Date.	Rookery.	Seals killed.	Remarks.
1890.			
July 28	Lukannon	129	For food.
Aug. 5	Reef	123	Do.
14	Lukannon	124	Do.
23	Reef	155	Do.
30	.....do	110	Do.
Sept. 6	Lukannon	83	Do.
13	.....do	93	Do.
22	.....do	110	Do.
29	Middle Hill	109	Do.
Oct. 4	Lukannon	109	Do.
14	Middle Hill	114	Do.
22	.....do	95	Do.
29	.....do	134	Do.
Nov. 14	.....do	255	Do.
Dec. 4	Reef	283	Do.
1891.			
May 15	Reef	233	For food.
29	.....do	114	Do.
June 4	Zapadnie	463	Do.
11	Zapadnie and Reef	718	Quota.
11	Northeast Point	1,112	Do.
12	Zapadnie	428	Do.
13	Northeast Point	430	Do.
13	Middle Hill	232	Do.
15	Northeast Point	866	Modus vivendi.
16	Reef	842	Do.
17	Southwest Bay	186	Do.
18	Reef	1,027	Do.
20	Middle Hill	119	Do.
25	Reef	215	Do.
29	.....do	400	Do.
July 8	.....do	100	Do.
13	.....do	121	Do.
15	Lukannon	122	Do.
21	Middle Hill	178	Do.
27	.....do	248	Do.
Aug. 3	Reef	118	Do.
5	Northeast Point	407	Do.
10	Lukannon	100	Do.
	Total	10,805	

Surely this is sufficient to convince every reasonable man that instead of impartially inquiring into the causes of the decrease of the seal herd and the best possible method of protection, as was originally intended, the commissioners have endeavored to screen the result of the work of the pelagic sealer by making statements about drives, stampedes, and epidemics on the islands which the facts do not warrant.

In another chapter will be found quotations, bearing on this phase of the case, from the argument of United States counsel before the Tribunal of Arbitration, to which I respectfully call the most earnest attention.

In order to show that the "dead-pup" problem was not a new thing on the islands before the British commissioners "discovered" it in 1891, I quote from the testimony of intelligent native chiefs and sealers and of many agents of the Government and of the lessees, who have had many years' experience on the seal islands, and they are unanimous in saying that previous to 1884 there were practically no dead pups to be seen on the rookeries; agents who were on the islands previous to 1884

saw but few or none. That, although there were some few drowned in the surf during heavy wind storms, or trampled to death occasionally by the fighting bulls, it was not until the pelagic sealer appeared in Bering Sea that dead pups were found by hundreds and by thousands and sometimes by the acre.

DEAD PUPS ON THE ROOKERIES.

Dead pups, which seemed to have starved to death, grew very numerous on the rookeries these latter years, and I noticed when driving the bachelor seal for killing, as we started them up from the beach, that many small pups, half starved, apparently motherless, had wandered away from the breeding grounds and become mixed with the killable seals. The natives called my attention to these waifs, saying that it did not use to be so, and that the mothers were dead, otherwise they would be upon the breeding grounds. (H. N. Clark, lessees' agent.)

There were a good many dead pups on the rookeries every year I was on the island, and they seemed to grow more numerous from year to year, because the rookeries were all the time growing smaller, and the dead pups in the latter years were more numerous in proportion to the live ones. (Alex. Hansson, sealer.)

The seals were apparently subject to no diseases; the pups were always fat and healthy, the dead ones very rarely seen on or about the rookeries prior to 1884. Upon my return to the islands in 1886 I was told by my assistants and the natives that a very large number of pups had perished the preceding season, a part of them dying upon the islands and others being washed ashore, all seeming to have starved to death. The same thing occurred in 1886 and in each of the following years to and including 1889. Even before I left the islands, in August, 1886, 1887, and 1888, I saw hundreds of half-starved, bleating, emaciated pups wandering aimlessly about in search of their dams, and presenting a most pitiable appearance. (H. H. McIntyre, general manager.)

But facts came under my observation that soon led me to what I believe to be the true cause of destruction. For instance, during the period of my residence on St. George Island, down to the year 1884, there was always a number of dead pups, the number of which I can not give exactly, as it varied from year to year and was dependent upon accidents or the destructiveness of storms. Young seals do not know how to swim at birth, nor do they learn how for six weeks or two months after birth, and therefore are at the mercy of the waves during stormy weather. But from the year 1884 down to the period when I left St. George Island there was a marked increase in the number of dead pups, amounting, perhaps, to a trebling of the numbers observed in former years, so that I would estimate the number of dead pups in the year 1887 at about 5,000 or 7,000 as a maximum.

During my last two or three years I also noticed among the number of dead pups an increase of at least 70 per cent of those which were emaciated and poor, and in my judgment they died from want of nourishment, their mothers having been killed while away from the island feeding, because it is a fact that pups drowned or killed by accidents were most invariably fat. Learning further, through the London sales, of the increase in the pelagic sealing, it became my firm conviction that the constant increase in the number of dead pups and the decrease in the number of marketable seals and breeding females found on the islands during the years 1885, 1886, and 1887 were caused by the destruction of female seals in the open sea, either before or after giving birth to the pups. The mother seals go to feeding grounds distant from the islands, and I can only account for the number of starved pups by supposing that their mothers are killed while feeding. (T. F. Morgan, lessees' agent.)

TIME OF APPEARANCE OF DEAD PUPS.

The loss of life of pup seals on the rookeries up to about 1884 or 1885 was comparatively slight, and was generally attributed to the death of the mother seal from natural causes or from their natural enemies in the water, or, as sometimes happened, sudden storms with heavy surfs rolling in from certain directions onto the breeding rookeries; but never at any time would a sufficient number of pups be killed to make it the subject of special comment either among the natives or the employees of the company. (W. S. Hereford, M. D., resident physician.)

Between 1874 and 1883 predatory vessels occasionally appeared in Bering Sea, among them the *Cygnet* in 1874 and the *San Diego* in 1876, but the whole number of seals destroyed by such vessels was small, and had no appreciable effect upon the

rookeries. In 1884 about 4,000 skins were taken in Bering Sea by three vessels, and starved pups were noticed upon the islands that year for the first time. In 1885 about 10,000 skins were taken in this sea, and the dead pups upon the rookeries became so numerous as to evoke comment from the natives and others upon the islands. (H. H. McIntyre.)

NO DEAD PUPS PRIOR TO 1884.

Poaching in Bering Sea had not begun in those years (from 1868 to 1876), and it was a rare thing to find a dead pup about the shores or on the rookeries. I had frequent occasion, after the close of the breeding season, to visit all parts of the island, and there was no appearance of gaunt or starved seals. Occasionally a dead pup was found that had been crushed to death by the bulls in their encounters with each other. (George R. Adams, lessees' agent.)

A dead pup was rarely seen, the dead being a small fraction of 1 per cent to the whole number of pups. I do not think while I was there I saw in any one season 50 dead pups on the rookeries, and the majority of dead pups were along the shore, having been killed by the surf. (Charles Bryant, Treasury agent.)

There were not, in 1880, sufficient dead pups scattered over the rookeries to attract attention or to form a feature on the rookery. (W. H. Dall, naturalist.)

During the time I was on the islands I only saw a very few dead pups on the rookeries, but the number in 1884 was slightly more than in former years. I never noticed or examined dead pups on the rookeries before 1884, the number being so small. (H. A. Glidden, Treasury agent.)

In performing my official duty I frequently visited the breeding rookeries, and during my entire stay on the island I never saw more than 400 dead pups on all the rookeries. (Louis Kimmel, Treasury agent, 1882–83.)

I never saw but a few dead pups on the rookeries until the schooners came into the sea and shot the cows when they went out to feed, and then the dead pups began to increase on the rookeries. (Nicoli Krukoff, native chief, St. Paul Island.)

I am informed that of late years thousands of young pups have died on the islands while the season was in progress. Certainly such condition did not exist during my residence on the Pribilof group. The pups were sometimes trampled upon by the larger animals, and dead ones might be seen here and there on the rookeries; but the loss in this particular was never enough or important enough to excite any special comment. (J. M. Morton, Treasury agent, 1877–78.)

Never while I was on St. George Island did I see a dead pup on the rookeries, and I certainly should have noticed if there had been any number on the island. (B. F. Scribner, Treasury agent, 1879–80.)

While I was on the island I never saw more than 25 dead pups on the rookeries during any one season. I have seen occasionally a dead one among the bowlders along the shore, which had probably been killed by the surf; but these dead pups were in no instance emaciated. (George Wardman, Treasury agent, 1881–1885.)

While on St. George Island there were practically no dead pups on the rookeries. I do not think I saw during any one season more than a dozen. On St. Paul Island I never saw any dead pups to amount to anything until 1884, and then the number was quite noticeable. (J. H. Moulton, Treasury agent.)

NUMBER OF DEAD PUPS IN 1891.

One thing which attracted my attention was the immense number of dead young seals; another was the presence of quite a number of young seals on all the rookeries in an emaciated and apparently very weak condition. I was requested by the Government agent to examine some of the carcasses for the purpose of determining the cause or causes of their death. I visited and walked over all the rookeries. On all, dead seals were to be found in great numbers. Their number was more apparent on those rookeries, such as Tolstoi and Halfway Point, the water sides of which were on smooth ground, and the eye could glance over patches of ground hundreds of feet in extent which were thickly strewn with carcasses.

Where the water side of the rookeries, as at Northwest Point and the reef (south of the village), were on rocky ground the immense number of dead was not so apparent, but a closer examination showed that the dead were there in equally great numbers scattered among the rocks. In some localities the ground was so thickly strewn with the dead that one had to pick his way carefully in order to avoid step-

ping on the carcasses. The great mass of dead in all cases was within a short distance of the water's edge. The patches of dead would commence at the water's edge and stretch in a wide swath up into the rookery. Among the immense masses of dead were seldom to be found the carcasses of full-grown seals, but the carcasses were those of pups, or young seals born that year. I can give no idea of the exact number of dead, but I believe that they could only be numbered by the thousands on each rookery. Along the water's edge and scattered among the dead were quite a number of live pups, which were in an emaciated condition. Many had hardly the strength to drag themselves out of one's way; thus contrasting strongly, both in appearance and actions, with the plump condition and active, aggressive conduct of the healthy appearing pups. (J. C. S. Akerly, M. D., resident physician.)

In the latter part of July, 1891, my attention was called to a source of waste, the efficiency of which was most startlingly illustrated. In my conversations with the natives I had learned that dead pups had been seen upon the rookeries in the past few years in such numbers as to cause much concern. In the middle of July they pointed out to me here and there dead pups and others so weak and emaciated that their death was but a matter of a few days. By the time the British commissioners arrived the dead pups were in sufficient abundance to attract their attention, and they are, I believe, under the impression that they first discovered them.

By the latter part of August deaths were rare, the mortality having practically ceased. An examination of the warning lists of the combined fleets of British and American cruisers will show that before the middle of August the last sealing schooner was sent out of Bering Sea. These vessels had entered the sea about July 1 and had done much effective work by July 15. The mortality among the pups and its cessation is synchronous with the sealing fleet's arrival and departure from Bering Sea.

There are several of the rookeries upon which level areas are so disposed as to be seen by the eye at a glance. In September Dr. Akerly and I walked directly across the rookery of Tolstoi, St. Paul, and in addition to the dead pups in sight, they lay in groups of from three to a dozen among the obscuring rocks on the hillside. From a careful examination of every rookery upon the two islands made by me in August and September, I place the minimum estimate of the dead pups to be 15,000, and that some number between that and 30,000 would represent more nearly a true statement of the facts. (J. Stanley-Brown, Treasury agent, 1891-92.)

No mention was ever made of any unusual number of dead pups upon the rookeries having been noticed at any time prior to my visit in 1870, but when I again visited the islands in 1890, I found it a subject of much solicitude by those interested in the perpetuation, and in 1891 it had assumed such proportions as to cause serious alarm. The natives making the drives first discovered this trouble, then special agents took note, and later on I think almost everyone who was allowed to visit the rookeries could not close their eyes or nostrils to the great numbers of dead pups to be seen on all sides. In company with Special Agent Murray, Captain Hooper, and Engineer Brerton, of the *Corwin*, I visited the Reef and Garbotch rookeries, St. Paul Island, in August, 1891, and saw one of the most pitiable sights that I have ever witnessed. Thousands of dead and dying pups were scattered over the rookeries, while the shores were lined with emaciated, hungry little fellows, with their eyes turned toward the sea uttering plaintive cries for their mothers, which were destined never to return. Numbers of them were opened, their stomachs examined, and the fact revealed that starvation was the cause of death, no organic disease being apparent. (W. C. Coulson, captain, revenue marine.

The schooners increased every year from the time I first noticed them, until in 1884 there was a fleet of 20 or 30, and then I began to see more and more dead pups on the rookeries, until in 1891 the fleet of sealing schooners numbered more than 100 and the rookeries were covered with dead pups. (John Fratis.)

It was during these years that dead, emaciated pups were first noticed on the rookeries, and they increased in numbers until 1891, in which year, in August and September, the rookeries were covered with dead pups. (Edward Hughes, employee of lessees, 1888-1894.)

On the 19th of August, 1891, I saw the young pups lying dead upon the rookeries of St. Paul, and I estimated their number to be not less than 30,000; and they had died from starvation, their mothers having been killed at the feeding grounds by pelagic hunters. (Joseph Murray, Treasury agent, 1889-1894.)

Q. Have you noticed any dead pups on the rookeries this past season, and in what proportion to former years?—A. I have seen an unusual number of dead pups this year on the breeding grounds; I may say twice as many as formerly. (J. C. Redpath, lessees' agent, 1875-1894.)

CAUSE OF DEATH OF PUPS.

Q. Did you see any dead pups on the rookeries this season?—A. Yes; my attention was called to the matter by J. Stanley-Brown, who requested me to examine them with a view to determining the cause of their death. I examined a number which had apparently recently died. Their bodies were entirely destitute of fat, and no food to be found in their stomachs. After a careful examination I found no evidence of disease.

Q. What do you assign as the cause of their death?—A. I believe them to have died of starvation.

Q. Why do you think they died of starvation?—A. From the fact that nearly all the dead on the rookery were pups, and from absence of all signs of disease, emaciated condition of their bodies, and absence of food from their stomachs. (J. C. S. Akerly, M. D.)

There were a great many dead pups on the rookeries during my last three years on St. Paul Island. Many of them wandered helplessly about, away from the groups or pods where they were accustomed to lie, and finally starved to death. We knew at the time what killed them, for the vessels and boats were several times plainly in sight from the island shooting seals in water, and the revenue cutters and company's vessels arriving at the island frequently reported their presence in Bering Sea, and sometimes the capture of these marauding crews. If all had been captured and the business broken up the seal rookeries would be healthy and prosperous to-day, instead of being depleted and broken up. I speak positively about it, because no other cause can be assigned for their depletion upon any reasonable hypothesis. (W. C. Allis, lessees' agent.

Dr. Akerly, the lessees' physician at the time, made an autopsy of some of the carcasses and reported that he could find no traces of any diseased condition whatever, but there was an entire absence of food or any signs of nourishment in the stomach. Before Dr. Dawson left I called his attention to what Dr. Akerly had done, but whether he saw him on the subject I can not tell. (Milton Barnes, Treasury agent.)

I procured a number of these pups, and Dr. Akerly, at my request, made autopsies, not only at the village, but later on upon the rookeries themselves. The lungs of these dead pups floated in water. There was no organic disease of heart, liver, lungs, stomach, or alimentary canal. In the latter there was but little and often no fecal matter, and the stomach was entirely empty. Pups in the last stage of emaciation were seen by me upon the rookeries, and their condition, as well as that of the dead ones, left no room to doubt that their death was caused by starvation. (J. Stanley-Brown.)

The pups on the rookeries were fat and healthy, and while I was on the islands no epidemic disease ever appeared among them, nor did the natives have stories of an epidemic ever destroying them. (Charles Bryant, Treasury agent, 1869–1877.)

I was informed at the time (November, 1891) that the stomachs of dead pups had been examined by the medical officers at the island and no traces of food found therein. From personal observation I am of the opinion that fully 90 per cent of them died of starvation, great emaciation being apparent. (John C. Cantwell, revenue marine.)

I have never known of any sickness or epidemic among the seals, and I am of the opinion that the thousands of dead pups on the rookeries last year died of starvation on account of their mothers being shot and killed while feeding at the fishing banks in the sea. I was present last year and saw some of the dead pups examined. Their stomachs were empty, and they presented all the appearances of starvation. I also noticed on the rookeries a great many emaciated pups, which on a later visit would be dead. It has always been the practice prior to 1891 for the natives to kill 3,000 to 4,000 pups in November for food, and we always find their stomachs filled with milk. (C. L. Fowler, lessees' agent.)

It is my opinion that the cows are killed by the hunters when they go out in the sea to feed, and the pups are left to die and do die on the island. (John Fratis, native sealer.)

They were thin, poor, and appeared to have starved to death. (Alex. Hanssen, sealer.)

It is a well-known fact that the female seals leave the islands and go great distances for food, and it is clearly proven that many of them do not return, as the number of pups starved to death on the rookeries demonstrates. (W. S. Hereford, M. D.)

For if the mother seals are destroyed their young can not but perish; no other dam will suckle them; nor can they subsist until at least 3 or 4 months old without the mother's milk. The loss of this vast number of pups, amounting to many thousands, we could attribute to no other cause than the death of the mother at the hands of pelagic seal hunters. (H. H. McIntyre.)

Q. How do you account for this?—A. I think the cows were killed by the poachers while away from the rookeries, and as mother seals nurse none but their own young, consequently the pups whose mothers were killed die from starvation. (Antone Melovedoff, native chief.)

The seals are never visited by physical disorders of any kind, so far as I could ascertain, and I have never seen on their bodies any blemishes, humors, or eruptions which might be attributed to disease. (John M. Morton.)

These latter pups I examined, and they seemed to be very much emaciated. In my opinion, they died of starvation, caused by the mothers having been shot while absent from the islands feeding. Another cause of their starving is because a cow refuses to give suck to any pup but her own, and she recognizes her offspring by its cry, distinguishing its voice from that of hundreds of others which are constantly bleating. (J. H. Moulton.)

The epidemic theory was urged very strongly in 1891, when the rookeries were found covered with dead pups, but a careful and technical examination was made of several of the dead bodies without discovering a trace of organic disease, while starvation was so apparent that those who examined them decided that it was the true cause of their death. Had sickness or disease attacked the seal herd, it is only reasonable to suppose a few grown seals would be found dead where so many young ones had died so suddenly, but the most diligent search has failed to find a grown seal dead upon the islands from unknown causes. From the discovery of the islands until the present time the flesh of the fur seal has been the daily meat ration of the natives and of the white people, and yet it is a fact that a tainted or diseased carcass has never been known. (L. A. Noyes, M. D., resident physician, 1880–1894.)

Some of these losses were due to their perhaps too early attempts to swim. When the pup is a few months old the mother seal conducts it to the water and teaches it to swim near the shore. If a heavy sea is encountered the weak little pup is liable to be thrown by the surf against the rocks and killed, but under natural conditions, and with the protection to the rookeries formerly enforced at the islands, the losses from this cause and all others combined (save alone the authorized killing) amounted to an infinitesimal percentage of the whole numbers in the herds. (H. G. Otis, Treasury agent, 1879–1881.)

Another theory, equally untrue, was that an epidemic had seized the herd; but investigations of the closest kind have never revealed the death on the islands of a full-grown seal from unknown causes. Let it be remembered that the flesh of the seal is the staple diet of the natives, and that it is eaten daily by most of the white employees as well; and yet it is true that a sign of taint or disease has never been found on a seal carcass in the memory of man. It was not until so many thousands of dead pups were found upon the rookeries that the problem was solved. The truth is, that when the cows go out to the feeding grounds to feed, they are shot and killed by the pelagic hunter, and the pups, deprived of sustenance, die upon the rookeries. Excepting a few pups killed by the surf occasionally, it has been demonstrated that all the pups found dead are poor and starved, and when examined their stomachs are found to be without a sign of food of any sort. The resident physician, Dr. Akerly, examined many of them, and found in every instance that starvation was the cause of death. (J. C. Redpath.)

A double waste occurs when the mother seal is killed, as the pup will surely starve to death. A mother seal will give sustenance to no pup but her own. I saw sad evidences of this waste on St. Paul Island last season, where large numbers of pups were lying about the rookeries, where they had died of starvation. (Commander Z. L. Tanner, U. S. N.)

I never heard of any disease among the seal herd, nor of an epidemic of any sort or at any time in the history of the islands. (Daniel Webster, lessees' agent, 1868–1894.)

If the mother of a young seal is killed, the pup is very likely to die. It will be so weak that the storm will dash it ashore and kill it, or it may die of starvation. I have seen pups hardly larger than a rat from lack of nourishment. A starved or neglected orphan pup is nearly sure to die. At one storm the natives found over 300 pups washed ashore in a little cove, and the water around was full of dead pups. It is certain that nearly all the dead pups were orphans. The female seal when suckling her young has to go out into the ocean in search of food, and it is those animals, or females on the way to the breeding grounds to give birth to the young, that we kill in the Bering Sea. (T. T. Williams, *quoting* Captain Olsen.)

The foregoing quotations are from the affidavits and reports of men who, through years of experience, gained a practical knowledge of fur-seal life in all its details, and who therefore know of what they speak beyond the possibility of successful contradiction.

It may be urged by our opponents that the testimony is that of men who are neither learned nor scientific, and who, being employed by either the Government or the lessees, had private and personal interests to subserve.

For the purpose of meeting such objections, and to show how the practical and scientific are agreed in this matter, I will here introduce a paper written by a well-known naturalist, who has had many years practical experience among the fur seals on the Commander Islands, and who has not now, nor ever had, any interest in the Pribilof Islands or the Alaskan seal herd.

His testimony is therefore the more valuable, and it will be found that it confirms my position in every particular:

DEPOSITION OF NICHOLAS A. GREBNITZKI,[1] RUSSIAN MILITARY CHIEF OF THE COMMANDER ISLANDS.

I, Nicholas A. Grebnitzki, Russian military chief of the Commander Islands district, with the rank of colonel, make the following statement:

I have been residing on the Commander Islands and have directed all sealing operations there for the last fifteen years, and during this whole period have been absent from the islands but very little. I have carefully observed seal life, the condition of the rookeries, and the method of taking seals at all seasons and under all conditions, with the object of keeping the Russian Government thoroughly informed as to its sealing interests and the proper management of the same.

While I have never had the opportunity to examine the Pribilof Islands seals, yet I do not hesitate to express the opinion that that herd and the Commander Islands herd are distinct and do not mingle at all. There are some natives on the islands who are familiar with both, and who state that there is a marked difference in the animals. Besides, my studies as a naturalist enable me to state that it would be contrary to all reason to suppose that they mingle with one another. The Commander herd approaches very closely to the Robben Island herd in winter, and yet it does not mingle with it. Of this I am sure, for I have charge of Robben Island as well as of the Commander Islands, and know the skins of the two herds to be different. The skin of the Commander seal is thicker, has coarser hair, is of a lighter color, and weighs about 20 per cent more than a Robben skin of the same size.

It is wholly improbable that the seals of the Commander herd visit any land other than the Commander Islands. I believe they regard these as their home, these islands being peculiarly adapted to their needs at the period to bring forth their young and of breeding. The fact that the Robben Island herd still frequents Robben Island to the exclusion of any other land, notwithstanding it has been subjected there to the utmost persecution, shows to my mind conclusively that the presence of man will not prevent a seal herd from returning to the same land year after year. Even if isolated cases have occurred (I know of none) in which for various causes a few of the Commander Islands seals reached other shores, such exceptions would not disprove the general rule above stated. I can readily understand that a female which had been wounded in the water might be subject (sic) to seek the nearest land and there give birth to her pup.

Annually, at almost stated periods, they arrive at the islands and immediately proceed to occupy the same grounds which have been occupied during past years in a way which makes it impossible to doubt that they are familiar with the locality. I believe that at some time during the year every seal comes ashore. There is no reason to believe that a certain number of any class remain swimming about in the neighborhood of the islands all summer without landing, although there is considerable difference in the time at which different classes arrive.

Soon after landing at the Commander Islands those cows which were fertilized the year previous give birth to their young. A cow does not, except in very rare instances, give birth to more than one pup in a season. The birth of pups can only take place

[1] No written evidence having been produced in the report of the British commissioners in support of the various views attributed to Mr. Grebnitzki, the United States have deemed it desirable to obtain from that official a written expression from *his views upon seal life in general.*

on shore. Cows never arrive at the islands with new-born pups. But the impossibility of birth in the water is best proved by the fact that the pup when first born is purely a land animal in all its habits. It does not voluntarily approach the water till it is several weeks old, and then it is obliged to learn to swim. A surf will sometimes wash the young pups off the rocks, when they are sure to be drowned. The pups can not swim at birth, but must be taught by their mothers. A pup would drown if thrown into the sea before learning to swim.

Copulation in the water I believe to be impossible, for the act is violent, of long duration, and in general character similar to that performed by land animals.

I believe that the seals leave the vicinity of the islands mainly on account of the severity of the winter. Of course, I do not mean to say that they would remain on the shore all the year round, as many of them do throughout the whole of the summer, for they would be obliged to take to the water to obtain food. What I mean is that they would not go so far away as they now do, but would remain around the islands, and thus give additional proof of the unquestionable fact that they regard them as their home. I base this statement upon the fact that during mild winters I have myself seen them in large numbers off the Commander Islands. They are often reported about 50 miles south of the westernmost of the Aleutian Islands and the Kamchatka Coast. This would be in accord with the habits of the seals of the Southern Hemisphere, which, I am informed, are found in the same locality, more or less, at all seasons. The seals generally leave the Commander Islands by the middle of November, by which time it has become cold and stormy, but in mild winters they have been on the islands as late as December.

I do not think that fur seals should be classed with wild animals any more than sheep or cattle when out on large pasturing grounds. Seals, unless needlessly frightened, become more or less accustomed to the sight of man among them on the rookeries, and while on land are at all times under his complete control. A few men can drive a large number of them without difficulty. They are intelligent to a very high degree, and can be made to become in a short time pets. The breeding males or bulls are alone aggressive.

Seals are polygamous, and the powers of fertilization of the male are very great. Since the births are about equally distributed between males and females, it follows that under natural conditions there would be a great excess of male life over that actually needed for the propagation of the species, and it is, as in the case of so many other animals, for the positive benefit of the herd as a whole that a portion of this excess of male life be killed off before it is of sufficient age to go on the rookeries. If not killed off the competition by the bulls upon the rookeries for females would be destructive of much life. This competition is already fierce enough.

During some of the years prior to the time of my arrival on the islands there had been considerable indiscriminate killing of seals without regard to age or sex; but during the fifteen years of my management of the Commander Islands rookeries all seals which have been killed constituted a portion of the excess of males above referred to, and known as bachelors, or holluschickie. This is why the rookeries are to-day in a much better condition than when I first went to the Commander Islands, notwithstanding that until the year 1891 a gradually increasing number of large skins has been taken. From 1886 to 1890 the average annual catch was about 50,000, the skins all being large. The last two years I have reduced the catches, because I now think 50,000 skins somewhat in excess of what the rookeries can yield, and for other causes which I will mention later. I feel very sure that the great cause of this diminution is pelagic sealing.

This year I have counted over 3,500 skins seized on poaching vessels, and have found 96 per cent to be skins of females. They were skins taken from Commander Island seals.

As to skins taken near Pribilof Islands I counted the skins seized in the *Rosa Olsen* and found two-thirds of them were skins of females. These were taken, as the log book of the *Rosa Olsen* shows, over 80 miles from shore.

I consider it a false argument to say that the killing of a proper portion of the excess of male life is bad, merely because it is an interference with the order of nature. If not interfered with, nature will produce an overpopulation of the rookeries, which would, of course, be a bad thing. By the present mode of killing a certain number of young males, population is regulated. No facts can be brought forward to show that this method is not the right one. Past experience shows that it is right.

The method is not proved to be bad by showing that during some years too many males may have been killed, and that the rookeries have thereby suffered. When such mistakes have been made they can be corrected by reducing the number of males to be killed for a few years; for the most absolute control can be exercised over the herd while it is on land. I claim that the method now pursued, when executed under proper regulations, is in theory and practice the only one by which sealing can be carried on *commercially* without injuring the vitality of the herd

and its ability to maintain its numbers at the proper limit. It does not cause the seals to change their habits in any way, and I do not believe that even an excessive killing of young males on the islands would have the effect of altering the habits of the female seals with regard to landing and cause them to remain about the islands instead of coming on shore.

Cows, except, perhaps, in rare cases of accident or for scientific purposes, are never allowed to be killed on the islands, and the reason for this is that all cows are needed for breeding purposes. To kill, therefore, any cow except a barren one (and there are few barren ones except amongst the very old cows) inflicts a much greater injury on the herd than the loss of a single life. It is not true that because it is proper to kill a certain number of males it is also proper to kill a certain number of females. But assuming that it might at some time become desirable to kill some females, it would still be wholly improper to kill them without regard to size or condition, as is the case when they are killed in the water.

There is at the present time upon the Commander Islands an abundance of male life for breeding purposes, and there is no fear that any female will not be served from lack of virile males. On the other hand, it is undoubtedly true that there were in 1892 relatively fewer females than in former years, and I attribute this to two causes: First, to killing of seals in the water, and, second, raids upon the islands. The first of these causes is by far the more important.

The raids have, owing to the great amount of foggy weather, taken place, to a certain extent, notwithstanding the greatest precautions to guard against them. The raiders kill males, females, and pups without discrimination; but however injuriously the raids have affected the rookeries still they are of much less importance than the killing of Commander Islands seals in the water. During the past two summers, and especially during the last one, this killing in the waters has become so great that if allowed to continue in future years the herd will be in danger of ultimate extinction.

I do not know exactly how wasteful this method may be, from the fact that all the animals wounded or killed are not captured, though I am told that much loss occurs in that way, and I know that under certain conditions a seal shot dead will sink at once. I can state positively, however, from actual experience and personal examination, that a vast proportion, fully 96 per cent, of the skins taken by this method during the present year are those of female animals. In addition, a certain number of the skins so taken are those of very young seals, probably of both sexes, such as are never killed on land.

Very few of the females killed are barren, no matter when or where they are killed. Females taken early in the season are generally heavy with young, in which condition they travel slowly as compared with the other seals. The killing of such a female involves, of course, the immediate loss of two lives. But even when the female is taken after she has been on shore and given birth to her young this same result follows eventually, for a seal will suckle only her own pup, and the pups are for the first three to five months dependent altogether on their mothers for food. Consequently when the mothers, who, after the birth of their pups, leave the rookeries in search of food (traveling sometimes considerable distances, I do not know exactly how far), fail to return, their pups must necessarily die.

There are always a few dead pups to be found on the rookeries whose death is not due to that of their mothers; but during the last year or two a greater number of dead pups have been actually noticed than heretofore, and have attracted the attention of all persons on the islands who are at all familiar with seal life. It can not be successfully contended that they all died of natural causes. There is no disease among the Commander Island seals, and while a certain number of young pups are always exposed to the danger of being crushed to death (but not as a result of the drives which are made to collect seals for killing) or of being drowned by the surf, yet these causes of death will not account for the greater mortality of pups which took place during the past summer. Besides, the bodies of the dead pups I refer to are those of starved animals, being greatly emaciated.

It is chiefly during the next few years that the effects of the recent killing of females will become most noticeable, because many of the pups which in those years would have become bachelors or holluschickie have never been born or died soon after birth.

With regard to the driving of the seals from the beaches to the places of slaughter, while it does not benefit them, yet I believe that there are very few cases in which it does them any harm even if they are redriven. I am sure it does not render them impotent. It should be remembered that, unlike the hair seals, they are fairly adapted to movement on land, as is proved by the fact that they are in some cases actually driven considerable distances over ground that is both rough and steep.

Since the killing of seals in the water is wasteful, and in every sense contrary to the laws of nature (which require that special protection be afforded to the females and young of all animals), I am of the opinion that it should be entirely forbidden. If it is only partly suppressed or prohibited within a certain distance from the

islands, the evil would not be cured, although its effects might be less noticeable, for the killing of females, many of them heavy with young, would necessarily continue, since all experience shows that female animals always constitute the chief catch of the open-sea sealer.

NICHOLAS A. GREBNITZKI,
District Chief of the Commander Islands, District St. Petersburg.

(Counter case, United States, p. 362.)

Here we have the testimony of one who is at once a scientist and one of the most practical of men; a man who has been officially interested in the fur-seal industry for many years, and who has devoted a great part of his life to the scientific and practical study of the species.

Every word he utters shows his intimate knowledge of the subject treated, and his practical common sense and scientific acumen, coupled with a breadth of view all his own, gives an extraordinary value to everything he says on the subject of fur seals.

True, he is interested in the fur-seal industry on the Commander Islands, belonging to Russia, and for that reason he may fall under the ban of the hypercritical who seem to suspect the honesty and the motives of all who have, or ever did have, any connection with the fur-seal islands on either side of Bering Sea.

That the class of critics alluded to may be silenced on this point I will introduce the testimony of leading naturalists, which is in full accord with all that I have already quoted. It will be seen that Dr. Merriam briefly stated the question at issue to the naturalists of Europe and asked for their views, which were freely given and which I take the pleasure of quoting in full.

CIRCULAR LETTER OF DR. C. HART MERRIAM.

Dr. C. Hart Merriam, one of the American Bering Sea commissioners, addressed the following circular letter to various leading naturalists in different parts of the world, for the purpose of obtaining their views as to the best method of preserving the fur seals of Alaska:

WASHINGTON, D. C., *April 2, 1892.*

DEAR SIR: The Government of the United States having selected me as a naturalist to investigate and report upon the condition of the fur-seal rookeries on the Pribilof Islands, in Bering Sea, with special reference to the causes of decrease and the measures necessary for the restoration and permanent preservation of the seal herd, I visited the Pribilof Islands and made an extended investigation of the subject, the results of which are here briefly outlined.

FACTS IN THE LIFE HISTORY OF THE NORTHERN FUR SEAL (CALLORHINUS URSINUS).

(1) The fur seal is an inhabitant of Bering Sea and the Sea of Okhotsk, where it breeds on rocky islands. But four breeding colonies are known, namely, (1) the Pribilof Islands, belonging to the United States; (2) the Commander Islands, belonging to Russia; (3) Robben Reef, belonging to Russia; and (4) the Kurile Islands, belonging to Japan. The Pribilof and Commander islands are in Bering Sea; Robben Reef in the Sea of Okhotsk, near the island of Saghalien, and the Kurile Islands between Yezo and Kamtchatka. The species is not known to breed in any other part of the world.

(2) In winter the fur seal migrates into the North Pacific Ocean. The herds from the Commander Islands, Robben Reef, and the Kurile Islands move south along the Japan Coast. The Pribilof Islands herd move south through the passes in the Aleutian chain. The old breeding males are not known to range much south of these islands. The females and young reach the American Coast as far south as California.

(3) Returning, the herds of females move northward along the coast of California, Oregon, Washington, and British Columbia in January, February, and March, occurring at varying distances from shore. Following the Alaska coast northward and westward they leave the North Pacific Ocean in June, traversing the passes in the Aleutian chain, and proceed at once to the Pribilof Islands.

(4) The old (breeding) males reach the islands much earlier, the first coming the first week in April or early in May. They at once land and take stands on the rookeries, where they await the arrival of the females. Each male (called a bull) selects

a large rock, on or near which he remains, unless driven off by stronger bulls, until August, never leaving for a single instant, night or day, and taking neither food nor water. Before the arrival of the females (called cows) the bulls fight savagely among themselves for positions on the rookeries, and many are severely wounded. All the bulls are located by June 20.

(5) The pregnant cows begin arriving early in June, and soon appear in large schools or droves, immense numbers taking their places on the rookeries each day between June 12 and the end of the month, varying with the weather. They assemble about the old bulls in compact groups called harems. The harems are complete early in July, at which time the breeding rookeries attain their maximum size and compactness.

(6) The cows give birth to their young soon after taking their places on the harems. The period of gestation is between eleven and twelve months.

(7) A single young is born in each instance. The young at birth are about equally divided as to sex.

(8) The act of nursing is performed on land; never in the water. It is necessary, therefore, for the cows to remain at the islands until the young are weaned, which is when they are 4 or 5 months old.

(9) The fur seal is polygamous, and the male is at least three times as large as the female. Each male serves 15 to 25 females.

(10) Copulation takes place on land. Most of the cows are served by the middle of July, or soon after the birth of their pups. They then take to the water, and come and go for food while nursing.

(11) The pups huddle together in small groups called pods, at some distance from the water. When 6 or 8 weeks old they move down to the water's edge and learn to swim. The pups are not born at sea, and if soon after birth they are washed into the sea they are drowned.

(12) The cows are believed to take the bull first when two years old, and deliver their first pup when 3 years old.

(13) Bulls first take stands on the breeding rookeries when 6 or 7 years old. Before this they are not powerful enough to fight the older bulls for positions on the harems.

(14) Cows when nursing, and the nonbreeding seals, regularly travel long distances to feed. They are commonly found 100 to 150 miles from the islands and sometimes at greater distances.

(15) The food of the fur seal consists of fish, squids, crustaceans, and probably other forms of marine life also.

(16) The great majority of cows, pups, and such of the breeding bulls as have not already gone, leave the islands about the middle of November, the date varying considerably with the season.

(17) The nonbreeding male seals (holluschickie), together with a few old bulls, remain until January, and in rare instances even until February.

(18) The fur seal as a species is present at the Pribilof Islands eight or nine months of the year, or from two-thirds to three-fourths of the time, and in mild winters sometimes during the entire year. The breeding bulls arrive earliest and remain continuously on the islands about four months; the breeding cows remain about six months, and the nonbreeding male seals about eight or nine months, and sometimes during the entire year.

SEALS KILLED ON THE PRIBILOF ISLANDS.

(19) The only seals killed for commercial purposes at the seal islands are nonbreeding males (under 5 or 6 years of age, called holluschickie). They come up on the rookeries apart from the breeding seals, and large numbers are present by the latter part of May. They constantly pass back and forth from the water to the hauling grounds. These animals are driven by the natives (Aleuts) from the hauling grounds to the killing grounds, where they are divided up into little groups. Those selected as of suitable size are killed with a club by a blow on the head; the others go into the water and soon reappear on the hauling grounds. In this way about 100,000 young males have been killed annually on the Pribilof Islands for twenty years.

(20) In addition to the commercial killing above described, a number of male pups were formerly killed each year to furnish food for the natives, but the killing of pups is now prohibited by the Government.

PRESENT NUMBERS COMPARED WITH FORMER ABUNDANCE.

The rookeries on both St. Paul and St. George islands bear unmistakable evidence of having undergone great reduction in size during the past few years. This evidence consists (1) in the universal testimony of all who saw them at an earlier period, and (2) in the presence upon the back part of each rookery of a well-marked strip

or zone of grass-covered land, varying from 100 to 500 feet in width, on which the stones and bowlders are flipper-worn and polished by the former movements of the seals, and the grass is yellowish-green in color and of a different genus (*Glyceria angustata*) from the rank, high grass usually growing immediately behind it (*Elymus mollis*). In many places the ground between the tussocks and hummocks of grass is covered with a thin layer of felting, composed of the shed hairs of the seals matted down and mixed with excrement, urine, and surface soil. The exact year when this yellow-grass zone was last occupied by seals is difficult to ascertain, but the bulk of testimony points to 1886 or 1887. The aggregate size of the areas formerly occupied is at least four times as great as that of the present rookeries.

CAUSES WHICH LED TO THE DEPLETION OF THE ROOKERIES.

The seals which move northward along the coast of the northwestern United States, British Columbia, and southeastern Alaska from January until late in June are chiefly pregnant females, and about 90 per cent of the seals killed by pelagic sealers in the North Pacific are females heavy with young. For obvious reasons many more seals are wounded than killed outright, and many more that are killed sink before they can be reached, and consequently are lost. As each of these contains a young, it is evident that several are destroyed to every one secured.

For several years the pelagic sealers were content to pursue their destructive work in the North Pacific, but of late they have entered Bering Sea, where they continue to capture seals in the water throughout the entire summer. The females killed during this period are giving milk and are away from the islands in search of food. Their young starve to death on the rookeries. I saw vast numbers of such dead pups on the island of St. Paul last summer (1891), and the total number of their carcasses remaining on the Pribilof Islands at the end of the season of 1891 has been estimated by the United States Treasury agents at not less than 20,000.

The number of seal skins actually secured and sold as a result of pelagic sealing is hown in the following table:

Year.	Number of skins.	Year.	Number of skins.	Year.	Number of skins.	Year.	Number of skins.
1872	1,029	1877	(?)	1882	17,700	1887	33,800
1873	(?)	1878	264	1883	9,195	1888	36,818
1874	4,949	1879	12,500	1884	14,000	1889	39,563
1875	1,646	1880	13,600	1885	13,000	1890	51,404
1876	2,042	1881	13,541	1886	38,907	1891	62,500

Inasmuch as the number of seals annually secured by pelagic sealing represents but a fraction of the total number killed, a glance at the above figures is enough to show that the destruction of seal life thus produced is alone sufficient to explain the present depleted condition of the rookeries.

Pelagic sealing as now conducted is carried on in the North Pacific Ocean from January until late in June, and in Bering Sea in July, August, and September. Some sealing schooners remain as late as November, but they do so for the purpose of raiding the rookeries.

It has been alleged that overkilling of young males at the islands is a principal cause of the depleted condition of the rookeries.

In reply to this contention, it is only necessary to bear in mind that the number of male and female fur seals is equal at birth, that the species is polygamous, and that each male serves on an average at least 15 to 25 females. It is evident, therefore, that there must be a great superabundance of males, of which a large percentage may be killed annually forever without in the slightest degree endangering the productiveness of the herd. Furthermore, it has been shown that the killing of seals at the Pribilof Islands is completely under the control of man and is restricted to the superfluous males, for selection as to sex and age can be and is exercised, so that neither females nor breeding males are killed. It is evident that this killing of non-breeding males could in no way affect the size or annual product of the breeding rookeries unless the number killed was so great that enough males were not left to mature for breeding purposes. There is no evidence that this has ever been the case. Moreover, all seals killed or wounded are invariably secured and their skins marketed; in other words, there is neither waste of the seal herd nor impairment of the productiveness of the breeding stock.

Pelagic sealing, on the other hand, is wasteful in the extreme and is directed to the fountain head or source of supply. From the very nature of the case, selection can not be exercised, and a large percentage of seals wounded are lost. Owing to the peculiar movements of the seal herds, it so happens that about 90 per cent of the seals killed in the North Pacific are females heavy with young, entailing a destruc-

tion of two seal lives for every adult seal killed. In Bering Sea, also, large numbers of females are taken; these females are in milk, and their young die of starvation on the rookeries.

Pelagic sealing as an industry is of recent origin, and may be said to date from 1879. The number of vessels engaged has steadily increased, as has the number of seals killed, until it appears that unless checked by international legislation the commercial extermination of the seal is only a matter of a few years. It seems a fair inference, therefore, that the only way to restore the depleted rookeries to their former condition is to stop taking seals at sea, and not only in Bering Sea, but in the North Pacific as well.

Having been selected by my Government solely as a naturalist, and having investigated the facts and arrived at the above conclusions and recommendations from the standpoint of a naturalist, I desire to know if you agree or differ with me in considering these conclusions and recommendations justified and necessitated by the facts in the case.

I shall be greatly obliged if you will favor me with a reply.

Very truly, yours,

C. HART MERRIAM.

REPLIES TO C. HART MERRIAM.

REPLY OF DR. ALPHONSE MILNE EDWARDS.

PARIS, *April 20, 1892.*

SIR: I have read with great interest the letter you addressed me with reference to the fur seals of Bering Sea, and I think it would be of real advantage to have concerted international measures so as to insure an effective protection to those valuable animals.

To-day the means of transportation at the disposal of the fishermen are so great, the processes of destruction which they employ are so improved, that the animal species, the object of their desire, can not escape them. We know that our migratory birds are during their travels exposed to a real war of extermination, and an ornithological international commission has already examined, not unprofitably, all the questions relating to their preservation.

Would it not be possible to put fur seals under the protection of the navy of civilized nations?

What has happened in the Southern Ocean may serve as a warning to us.

Less than a century ago these amphibia existed there in countless herds. In 1808, when Fanning visited the islands of South Georgia, one ship left those shores carrying away 14,000 seal skins belonging to the species *Arctocephalus australis*. He himself obtained 57,000 of them, and he estimated at 112,000 the number of these animals killed during the few weeks the sailors spent there that year.

In 1822 Weddell visits these islands, and he estimates at 1,200,000 the number of skins obtained in that locality. The same year 320,000 fur seals were killed in the South Shetlands. The inevitable consequences of this slaughter were a rapid decrease in the number of these animals. So, in spite of the measures of protection taken during the last few years by the governor of the Falkland Islands, these seals are still very rare, and the naturalists of the French expedition of the *Romanche* remained for nearly a year at Tierra del Fuego and the Falkland Islands without being able to capture a single specimen.

It is a source of wealth which is now exhausted.

It will soon be thus with the *Callorhinus ursinus* in the North Pacific Ocean, and it is time to insure to these animals a security which may allow them regular reproduction.

I have followed with much attention the investigation which has been made by the Government of the United States on this subject. The reports of the commissioners sent to the Pribilof Islands have made known to naturalists a very large number of facts of great scientific interest, and have demonstrated that a regulated system of killing may be safely applied in the case of these herds of seals when there is a superfluity of males. What might be called a tax on celibacy was applied in this way in the most satisfactory manner, and the indefinite preservation of the species would have been assured if the emigrants, on their way back to their breeding places, had not been attacked and pursued in every way.

There is, then, every reason to turn to account the very complete information which we possess on the conditions of fur-seal life in order to prevent their annihilation, and an international commission can alone determine the rules, from which the fishermen should not depart.

Accept, etc.,

A. MILNE EDWARDS,
Director of the Museum of Natural History.

REPLY OF DR. CARLOS BERG, OF BUENOS AYRES.

JUNE 4, 1892.

SIR: In answer to your circular dated April 2, and directed to Dr. Hermann Burmeister, I regret to let you know that same died shortly before the transmission of your circular by D. N. Bertolette, esq.

Having been named director of the national museum in the place of the deceased, I have read with great interest your report and conclusions about the causes of the decrease and the measures necessary for the restoration and permanent preservation of the seal herd on the Pribilof Islands, in Bering Sea, and according to your wish I have the pleasure to let you know that from the standpoint of a naturalist I perfectly agree with you in considering your conclusions and recommendations justified and necessitated by the facts stated by you as a result of your special investigation on the above-named islands.

Very truly, yours, CARLOS BERG.

REPLY OF PROF. DR. ALFRED NEHRING, ROYAL AGRICULTURAL COLLEGE OF BERLIN.

BERLIN, *April 21, 1892.*

Mr. C. HART MERRIAM,
United States Department of Agriculture, Washington, D. C.:

HIGHLY ESTEEMED SIR: I have carefully read and considered your elaborate and very interesting letter of the 2d instant, which I received yesterday through Mr. John Brinkerhoff Jackson, secretary of legation of the North American legation in this city, and, in reply, I send you a statement of my views with regard to its contents.

What you say concerning the mode of life, and especially the annual migrations of the fur seal (*Callorhinus ursinus*), whose breeding places are the Pribilof Islands, is so clear and convincing, and harmonizes so perfectly with what has been observed by other reliable scientists, that I fully agree with your deductions. I am, like yourself, of the opinion that the remarkable decrease of fur seals on the rookeries of the Pribilof Islands, which has, of late years, become more and more evident, is to be attributed mainly, or perhaps exclusively, to the unreasonable destruction caused by the sealers who ply their avocation in the open sea. The only rational method of taking the fur seal, and the only one that is not likely to result in the extermination of this valuable animal, is the one which has hitherto been employed on the Pribilof Islands under the supervision of the Government. Any other method of taking the northern fur seal should, in my opinion, be prohibited by international agreement. I should, at furthest, approve a local pursuit of the fur seal, where it is destructive of the fisheries in its southern winter quarters. I regard pelagic fur sealing as very unwise; it must soon lead to a decrease, bordering on extermination of the fur seal.

With great respect, Prof. Dr. ALFRED NEHRING,
Professor of Zoology in the Royal Agricultural College of Berlin.

REPLY OF PROF. COUNT TOMMASO SALVADORI.

ZOOLOGICAL MUSEUM, *Turin, April 25, 1892.*

C. HART MERRIAM,
United States Department of Agriculture,
Division of Ornithology, Washington, D. C.

DEAR SIR: I have received your letter concerning the northern fur seal, on the condition of which you have been selected as naturalist to investigate and report by the Government of the United States.

As a whole I agree with you as to the facts and conclusions drawn on your report, although the increasing number of seal skins actually secured and sold, as a result of pelagic sealing shown in your table, does not sufficiently prove, in my mind, that we are already in the period of a decided diminution of the number of living seals. Still, I quite admit that it is absolutely necessary to adopt some measures for the preservation of the seal herds.

No doubt the free pelagic sealing is a cause which will act to the destruction of the seal herds, and to that it must be put a stop as soon as possible. But at the same time I think that the yearly killing of about 100,000 young males on the Pribilof Islands must have some influence on the diminution of the herds, especially preventing the natural or sexual selection of the stronger males, which would follow if the young males were not killed in such a great number. So that, with the stopping of the pelagic sealing, I think, at least for a few years, also the slaughter of so many young males in the Pribilof Islands should be prohibited.

I remain, very truly, yours,

PROF. T. SALVADORI.

insectivorous birds, who knows if the equilibrium of nature will not be broken—an equilibrium to which the creatures on the way to extinction have greatly contributed?

With his harpoons, his firearms, and his machines of every kind, man, with whom the instinct of destruction attains its highest point, is the most cruel enemy of nature and of mankind itself.

Happily, while yet in time, the savants sound the alarm. In this century, when we believe in science, we must hope that their voice will not be lost in the desert.

Above all, I have the conviction that the very wise measures which you propose with the view of preserving the *Callorhinus ursinus* from an impending destruction will be submitted to an international commission, which will ratify them and give them the force of a law.

Will you accept, sir and honored colleague, the expression of my most distinguished sentiments.

DR. RAPHAEL BLANCHARD.

REPLY OF DR. WILHELM LILLJEBORG.

STOCKHOLM, *May 14, 1898.*

DR. C. HART MERRIAM.

DEAR SIR: In answer to your letter of 2d of April, asking our opinion as to the causes of the decrease of the stock of northern fur seals (*Callorhinus ursinus*) on the rookeries of the islands in the North Pacific or Bering Sea, and concerning the means proposed by you to arrest this decrease, allow us to state the following:

Your description of the life of the northern fur seal corresponds generally with similar descriptions by former authors, from the celebrated Dr. Steller, who (1741–42) visited the Commander Islands with Vitus Bering, to our days, and also with our own personal experiences of the animal life in the Arctic seas, and with the informations one of us gathered from the inhabitants during a short stay in the Bering Sea.

We do not, therefore, hesitate to declare that the facts about the life and habits of the fur seal stated by you in your said letter under 1–20 should serve as a base for the regulations necessary to preserve this gregarious animal from its threatened extinction in a comparatively short time.

These regulations may be divided into two categories, viz: (1) Regulations for the killing, etc., of the fur seals on the rookeries, in order to prevent the gradual diminution of the stock; (2) regulations for the pelagic sealing, or for the hunting of the seals swimming in the ocean in large herds to and from the rookeries, or around the rookeries during the time when the females are suckling the pups on land.

As to the former question, the killing of the seals on the rookeries, it seems at present regulated in a suitable manner to effectually prevent the gradual diminution of the stock. If a wider experience should require some modifications in these regulations, there is no danger but that such modifications will be adopted. It is evidently in the interest of the owners of the rookeries to take care that this source of wealth should not be lessened by excessive exploitation. Nor will there be any difficulty for studying the conditions for health and thriving of the animals during the rookery season.

As to the pelagic sealing, it is evident that a systematic hunting of the seals in the open sea on the way to and from or around the rookeries will very soon cause the complete extinction of this valuable and, from a scientific point of view, extremely interesting and important animal, especially as a great number of the animals killed in this manner are pregnant cows, or cows temporarily separated from their pups while seeking food in the vicinity of the rookery. Everyone having some experience in seal hunting can also attest that only a relatively small part of the seals killed or seriously wounded in the open sea can in this manner be caught. We are therefore persuaded that a prohibition of pelagic sealing is a necessary condition for the prevention of the total extermination of the fur seal.

Very truly, yours, W. LILLJEBORG.

REPLY OF DR. A. V. MIDDENDORFF.

MR. W. WURTS.

SIR: My delay in answering your letter is due to illness. I am very glad that the United States have selected so competent a person as Dr. Merriam for the purpose of ascertaining the causes of the rapid decrease of seals. The facts of the case have now been scientifically explained, so that they may be readily understood even by an unscientific person. The method of treating these animals which was originally adopted by the Russian American Company at their home on the Pribilof Islands is still continued in the same rational manner, and has, for more than half a century

been found to be excellent, both on account of the large number of seals taken, and because they are not exterminated. So long as superfluous young males only are killed, not only the existence, but even the increase of the herd is assured.

Seals are, unfortunately, migratory animals, and set out on their journey during the winter months. This is especially true of the pregnant females. They are then hunted with constantly increasing rapacity, and are killed in the open sea by freebooters from all parts of the world. It is evident that the only remedy for such a state of things can be afforded by international protection.

How rapidly extermination progresses is shown by the disappearances of millions of bisons. With these, however, the case is quite different, since their destruction is of no importance in an economical point of view. Its importance is merely of an esthetical character, and from this standpoint only does modern civilization demand the preservation of two specimen herds, numbering a few hundred head each—one in Lithuania and the other in North America. Since the attempts to domesticate the bison, and to produce a cross between it and our domestic cattle have proved a failure, it is plain that the ground where the bison formerly grazed can be more advantageously occupied and yield milk abundantly.

The case is quite otherwise with the seal. This animal is of economical importance, and was created for a domestic animal, as I pointed out many years ago. (See my Siberian Journey, vol. iv, part 1, p. 846.) It is in fact the most useful of all domestic animals, since it requires no care and no expense, and consequently yields the largest net profit. If we suppose the seal to have disappeared, what could take its place as converter of the immense supply of fish in the ocean into choice furs to stock the markets of the world?

Bering Island, which has been deserted for one hundred and fifty years, now stands as a warning. Has modern progress succeeded in any way in supplying the place of the seal cow (*Rhytina stelleri*), that huge monster which, as a consumer of marine plants, was intended to convert useless sea weed into savory meat?

If you will communicate (as you say you propose to do) the contents of this letter to Dr. Merriam, whose address I do not know, you will oblige me greatly.

I have the honor to be, sir, your most obedient servant,

Dr. A. V. MIDDENDORFF.

REPLY OF DR. EMIL HOLUB.

PRAGUE, *May 18, 1892.*

Dr. C. H. MERRIAM, Esq.

DEAR SIR: With sincere attention I have perused the records of your investigation of the habits, the present decrease, and regarding the future of the fur seal (*Callorhinus ursinus* Gray). Having well considered the matter, I will pass my opinion without any prejudice whatever.

The Government of the United States may be congratulated upon the action taken in having sent out for the investigation of a matter which falls into the department of the board of trade a scientist, and in this special case a man who has taken such great pains with the object of his researches.

Our age makes it a duty for all civilized nations to bring trade and commerce in a close contact with science. This becomes quite a necessity, like in the present case, in which commercial customs, even international agreements, laws, etc., become insufficient to secure a sound decision. Such scientific investigations can supply the desired conclusions; they do advice the measures to be taken, and provide the basis upon which an international understanding can be established.

Regarding the object of your researches, I indorse your opinion that the decrease of the numbers of the fur seal on the Pribilof Islands has been caused by pelagic sealing in the North Pacific and in the Bering Sea, and that this taking of the seals at sea has to be stopped as early as possible.

To restore in time the numbers of former years, I take the liberty to name the following measures for the sake of consideration:

A. Concerning certain agreements with other powers.

(1) A mutual understanding upon the question between the United States, Russia, and Japan. These three States are concerned primo loco in this matter as being the proprietors of the breeding places as well, like also of the fishing grounds of the said animals during their yearly wanderings to and fro.

(2) For the sake of brevity in action and a speedy settlement, these three States (after having agreed upon the foregoing) to select but one representative.

(3) The United States having given impulse to the matter to gain the prestige, that a United States man shall be selected to this honor.

(4) A congress to be called together, invitations to be sent to those of the European and American powers, whose subjects indulge in pelagic sealing in the North Pacific and the Bering Sea.

(5) In the congress the representative of the three powers to have six voices, resulting in two voices for every one of these powers, which concession to be granted upon the facts of paragraph 1.

(6) The congress to deal with the stoppage of pelagic sealing of the fur seal, and possibly to come to an understanding upon it and to enforce it.

B. Concerning certain laws and precautions in the dominions of the United States.

(1) To prohibit taking seals at sea by home vessels and by small boats along the coast during the wanderings of the animals. I think that a great many fur seals are killed on their way to the south and their return to their breeding places in the north before ever they do reach the neighborhood of the latter. The fact that these wandering animals are chiefly pregnant females, which as game are protected by laws among all civilized nations, may grant them safety also along the coasts of British Columbia.

(2) To see that the existing laws at present in use on both St. Paul and St. George islands regarding the protection of male pups are strictly observed.

(3) To investigate the nutritious necessities of the fur seal. I believe that the animals feed, besides on fish and crustaceans, also on different forms of mollusca, especially on mussels, and also on certain seaweeds.

(4) In ascertaining the foregoing, to try to increase the quantity of food in the sea of the Pribilof Islands, especially for the reason that females, when nursing, may be not compelled to stray as far as 100 to 150 miles from shore, deserting their pups for so long and being also exposed to the weapons of the pelagic sealers.

(5) In ascertaining the nutritious necessities to pay special attention to mussels belonging to the families of the *Mytilidæ* and *Aviculidæ* (to the genera of *Mytilus*, *Modiola*, *Lithodomis*, *Pinna*, and others), who have thin shells, or to other species of the North Pacific, which would promise a good prolification; further, also, to certain seaweeds, for submarine plantation, the species to which I allude containing a great deal of eatable gelatinous matter.

(6) These measures, besides to be taken from economical reasons on behalf of home commerce and home trade, to be recommended also from a scientific point of view, as an act of preservation of a sea mammal and from the common laws of humanity, that species of large and wild living mammal may be guarded against utter annihilation.

Mankind, never to forget that, being the master among the living creatures on earth, it has the power of re-creation.

If the pelagic sealing of the fur seal is carried on still longer, like it has been executed during the last years, the pelagic sealing as a business matter and a living will soon cease by the full extermination of the useful animal.

The objections brought forward by the friends of the pelagic sealing against its stoppage, that the latter will ruin a great many families of seamen and fishers, can not be taken as sound arguments. It is a well-known and a common thing in our age, but a weekly occurrence during the last years, that a new trade springing up ruins two other trades, and hardly in one case out of hundreds can a compensation be given or is asked for.

In concluding my note, I thank you, my dear sir, as my esteemed fellow-worker in another transatlantic sphere, for the excellent work which you have executed during your weary investigations in the Bering Sea. May this noble and important work be crowned with the deserved success that that piratic hunt may be stopped forever. The opportunity of the Columbian Exhibition in Chicago might be used to call the congress to Washington, and then to give to the delegates the treat of a visit to the monstrous exhibition.

I should feel very happy if one day to come I can make your personal acquaintance and can shake hands with you, my dear sir.

With my humble respects, I remain, your most obedient,

Dr. Emil Holub.

LETTERS AND STATEMENTS OF NATURALISTS.

STATEMENT BY PROF. T. H. HUXLEY.

The following statement by Prof. T. H. Huxley, F. R. S., etc., the eminent naturalist, was prepared at the request of the counsel for the United States. As appears from the statement itself, it was given by Professor Huxley as a scientist, not as a retained advocate:

(1) The problem of the fur-seal fishery appears to me to be exactly analogous to that which is presented by salmon fisheries. The Pribilof Islands answer to the upper waters of a salmon river; the Bering Sea south of them and the waters of the

Northwest Pacific from California to the Shumagin Islands to the rest of the course of the river, its estuary, and adjacent seacoast. The animals breed in the former and feed in the latter, migrating at regular periods from the one to the other. (The question whether the fur seals have any breeding places on the Northwest Coast outside of Bering Sea may be left open, as there seems to be no doubt that the main body breeds at the Pribilofs.)

(2) An important difference is that the females, bachelors, and yearling fur seals feed largely within a radius of, say, 50 miles of the Pribilof Islands, while the adult salmon do not feed (sensibly, at any rate) in the upper waters.

(3) It is clear in the case of fur seals, as in that of the salmon, that man is an agent of destruction of very great potency, probably outweighing all others. It would be possible in the case of a salmon river to fish it in such a fashion that every ascending or descending fish should be caught, and the fishery be in this way surely and completely destroyed. All our salmon-fishery legislation is directed toward the end of preserving the breeding grounds on the one hand, on the other of preventing the lower-water fishermen from capturing too large a proportion of the ascending fish.

(4) Our fishery regulations are strict and minute. Every salmon river has its fishery board, composed of representatives of both the upper and the lower water fisheries, whose business it is to make by-laws under the acts of Parliament and to see that they are carried out. A Government inspector of fisheries looks after them, and holds inquiries under the authority of the home secretary in case of disputes. On the whole, the system works well. The fisheries of rivers which have been pretty nearly depopulated have been restored, and the yield of the best is maintained. But the upper-water and lower-water proprietors are everlastingly at war, each vowing that the other is ruining the fisheries, and the inspector has large opportunities of estimating the value of diametrically opposite assertions about matters of fact.

(5) In the case of the fur-seal fisheries the destructive agency of man is prepotent on the Pribilof Islands. It is obvious that the seals might be destroyed and driven away completely in two or three seasons. Moreover, as the number of bachelors in any given season is easily ascertained, it is possible to keep down the take to such a percentage as shall do no harm to the stock. The conditions for efficient regulation are here quite ideal.

(6) But in Bering Sea and on the Northwest coast the case is totally altered. In order to get rid of all complications, let it be supposed that western North America, from Bering Straits to California, is in the possession of one power, and that we have only to consider the questions of the regulations which that power should make and enforce in order to preserve the fur-seal fisheries. Suppose, further, that the authority of that power extended over Bering Sea and over all the Northwest Pacific east of a line drawn from the Shumagin Islands to California.

Under such conditions I should say, looking at nothing but the preservation of the seals, that the best course would be to prohibit the taking of the fur seals anywhere except on the Pribilof Islands, and to limit the take to such percentage as experience proved to be consistent with the preservation of a good, average stock. The furs would be in the best order, the waste of life would be least, and, if the system were honestly worked, there could be no danger of overfishing.

(7) However, since northwest America does not belong to one power, and since international law does not acknowledge Bering Sea to be a mare clausum, nor recognize the jurisdiction of a Riparian power beyond the 3-mile limit, it is quite clear that this ideal arrangement is impracticable.

The cause of the fur-seal fisheries is, in fact, even more difficult than that of the salmon fisheries in such a river as the Rhine, where the upper waters belong to one power and the lower to another.

(8) The Northwest Pacific, from California to Shumagin at any rate, is open to all the world, and, according to the evidence, the seals keep mainly outside the 3-mile limit. A convention between Great Britain and the United States (backed by a number of active cruisers) might restrain the subjects of both. But what about ships under another flag?

(9) Moreover, I do not see how the Canadians could be reasonably expected to give up their fishery for the sake of preserving the Pribilof fisheries, in which they have no interest.

(10) If, however, it is admitted that the Canadians can not be asked to give up their fisheries, I see no way out of the difficulty except one, and I do not know that it is practicable. It is that the Pribilof, Bering, and Northwest coast fur-seal fisheries shall be considered national property on the part of the United States and Great Britain, to be worked by a joint fishery commission, which shall have power to make by-laws under the terms of a general treaty, to which I suppose other powers (who have hardly any interest in the matter) could be got to agree.

(11) I am free to confess that my experience of the proceedings of fishery boards does not encourage me to hope that the proceedings of such a commission would be

altogether harmonious; but if it were composed of sensible men they would, sooner or later, struggle out into a modus vivendi, for, after all, it is as much the Canadian interest that the Pribilof fisheries should be preserved as it is the United States interest that the seals should not be extirpated in Bering Sea and the Northwest Pacific.

(12) In such a case as this I do not believe that the enforcement of a close time, either in Bering Sea or on the Northwest coast, would be of any practical utility unless the fishing is absolutely prohibited (which I take to be out of the question). It must be permitted while the seals are in the sea; and if it is permitted, there is no limit to the destruction which may be effected.

Numerous as the seals may be, they are a trifle compared with herring schools and cod walls, and human agency is relatively a far more important factor in destruction in their case than in that of herrings and cod. Up to this time fishing has made no sensible impression on the great herring and cod fisheries; but it has been easy to extirpate seal fisheries.

(13) Finally, I venture to remark that there are only two alternative courses worth pursuing.

One is to let the fur seals be extirpated. Mankind will not suffer much if the ladies are obliged to do without seal-skin jackets, and the fraction of the English, Canadian, and American population which lives on the seal-skin industry will be no worse off than the vastly greater multitude who have had to suffer for the vagaries of fashion times out of number. Certainly, if the seals are to be a source of constant bickering between two nations, the sooner they are abolished the better.

The other course is to tread down all merely personal and trade interest in pursuit of an arrangement that will work and be fair all round, and to sink all the stupidities of national vanity and political self-seeking along with them.

There is a great deal too much of all these undeniable elements apparent in the documents which I have been studying.

T. H. HUXLEY.

APRIL 25, 1892.

AFFIDAVIT BY DR. PHILIP LUTLEY SCLATER.

Philip Lutley Sclater, Ph. D., secretary of the Zoological Society of London, being duly sworn, doth depose and say that in his opinion as a naturalist:

(1) Unless proper measures are taken to restrict the indiscriminate capture of the fur seal in the North Pacific he is of opinion that the extermination of this species will take place in a few years, as it has already done in the case of other species of the same group in other parts of the world.

(2) It seems to him that the proper way of proceeding would be to stop the killing of females and young of the fur seal altogether or as far as possible, and to restrict the killing of the males to a certain number in each year.

(3) The only way he can imagine by which these rules could be carried out is by the killing the seals only in the islands at the breeding time (at which time it appears that the young males keep apart from the females and old males) and by preventing altogether, as far as possible, the destruction of the fur seals at all other times and in other places.

PHILIP LUTLEY SCLATER, Ph. D., F. R. S.

CITY OF WASHINGTON, *District of Columbia, ss:*

C. H. Townsend, being duly sworn, deposes and says:

I am 33 years of age, and my profession is that of a naturalist. I am attached to the United States Fish Commission steamer *Albatross*, with which Commission I have been connected for nine years. Occupying the position of resident naturalist on that vessel, as I did, I have collected constantly during this period and have hunted with all kinds of firearms and under various conditions. I have made seven voyages to Alaska.

I visited the Pribilof Islands for the first time in 1885, spending the months of June and September thereon in making collections of natural-history specimens, including those of the fur seal, of which I brought down twenty. In the year 1891 I again visited the Island of St. Paul, arriving there July 28 and remaining there about ten days. The British commissioners were on the island at that time. I made frequent observations as to the conditions of the rookeries during this period. Early in the summer of 1892 I visited, at the request of the United States Government, Guadelope Island, for the purpose of acquainting myself with seal life there and of obtaining skulls of the fur seals which formerly frequented those regions. Later in 1892 I once more visited the Island of St. Paul, arriving there June 30. I was there on the

island and on the United States Revenue steamer *Corwin*, cruising to the west of the islands, continuously until about August 15, and was engaged during all of this time in the study of seal life, either on land or in the waters of Bering Sea, and have shot seals from a small boat.

I carefully noted the fact this year that the young seal is at birth attached to a large placenta, equal parts to one-third of its weight and of a bright red color. It is sometimes not expelled until an hour or so after birth, remaining attached in the meanwhile by the umbilical cord to the pup. It frequently remains attached to the pup a day or more. After parturition the female takes an immediate interest in her young, and if it has fallen into some slight rock crevice she gently draws it toward her, taking its nape in her teeth. She repeatedly turns to it with manifestation of affection.

Prior to July 27, 1892, many of the females had taken to water to feed and could thereafter be seen returning at all times to suckle their young. I quote the following written memorandum made by me on St. Paul at that date: "Bulls on rookeries getting exhausted and quiet, mostly sleeping. Cows largely at sea. Some bulls have hauled out on sand beaches that so far have been bare. Four-fifths of the seals on rookeries to-day are pups."

July 28 I made the following note: "Many females coming from the water bleating for their young."

I have killed sea lions at the following localities, where they breed in considerable numbers, and found their breeding ground impregnated with the same rank, disagreeable smell that is so noticeable a feature of the breeding grounds of the Pribilof fur seal: Light-house Rock, Alaska Peninsula, Farallon Islands, and Monterey Rock, California; San Benito Islands, Lower California, and San Luis Islands, in the Gulf of California. The soil and rocks at these places is as foul with seal excrement as at the Pribilofs, where urine, excrement, decaying placentas, and other filth rubbed and trodden into the soil and rock depressions cause the odors so characteristic of this vicinity. The rocks at Monterey may be used in illustration: They lie near Cypress Point, 400 or 500 yards off the shore, which the carriage drive follows, and are covered with hair seals, which breed there. They are conspicuously stained with excrement, and where the animals lie thickest the ground is smeared and slippery with it. I collected sea lions there in January of the present year, and after my shooting had frightened all the animals off to the sea the rank smell of the place itself drifted across the channel into the nostrils of the tourists of the Hotel del Monte, who witnessed our operations. It would indeed be an extraordinary occurrence if fur seals did not deposit excrement upon their breeding grounds in the same way that all other animals of this class do.

As already stated above, I was attached to the steamer *Corwin* during the past summer, and I made all the examinations of the stomachs of the seals referred to in Captain Hooper's report, covering, in all, 33 seals. I annex hereto photographs of two of the seals which were dissected and examined by me on the deck of the steamer *Corwin*. These seals were taken on the 2d day of August, 1892, at a distance of about 175 miles from the islands. The photographs exhibit the mammary glands and convey a good idea of the considerable size of these glands, which in all cases were filled with milk. The inference is unavoidable that the pup is a voracious feeder, and this inference is in keeping with the observations I have made on the rookeries, where I have repeatedly seen pups suckle for half an hour at a time. The mammary gland is very widely spread over the lower surface of the animal; beginning between the fore flippers, in fact at the anterior of the sternum, it extends well up under the armpits and back to the pubic bones. The milk glands are quite thick and completely charged with milk. The photographs, especially the first one, exhibit the milk streaming from the glands on to the deck.

Annexed to the report of Captain Hooper is a table giving the results of the examination of 41 seals which were killed in Bering Sea in 1892. It appears that of this number 22 were nursing seals. The photographs hereto annexed show exactly the way all of these nursing female seals looked when cut open on the deck of the *Corwin*.

From the fact that among the females thus taken and examined there were found mostly nursing cows, with a small number of virgin cows, it is reasonable to conclude that there are practically no barren females swimming about in the sea unattached to the islands, or that, at any rate, if such seals exist they are rarely, if ever, taken. In all my experience I have never seen anything to lead me to the conclusion that there is such a thing as a barren female. In the case of the virgin cows, a careful examination of the uterus proved them to be too immature for conception.

In the stomachs of many of the seals examined as above stated there were found large quantities of fish, mainly codfish. There is nothing surprising in this fact, that codfish should be found in the stomachs of surface feeders such as seals are. While taken at the bottom, the codfish is not restricted to deep water. It is found from the shallows along the shore out to the banks where fishermen usually take them. They are often taken at intermediate depths, but fish taken at the bottom are, as a rule, larger.

The cod is a voracious feeder upon squid, which abound at the surface. In Alaskan waters I have taken hundreds with the dip net, after attracting them with the electric light of the *Albatross*. In its frequent migrations from bank to bank the cod passes over tracks of ocean where the water is of profound depth. It is a regular feeder upon herring and many other fishes which school at the surface, and in Alaskan waters frequently follows the fisherman's bate from the bottom to the surface.

As a result of my combined observations upon land and water, as hereinbefore detailed, I have no hesitation in stating positively that soon after a female gives birth to her young she leaves the island in quest of food, that she travels great distances in search of it, and that she returns to the islands heavily laden with milk.

While hunting in the *Corwin's* boat many seals were fired upon when asleep. They usually sleep with their head to leeward and keep it moving uneasily from side to side, but with the nose held clear of the water. A sleeping seal has his vital parts pretty well submerged—the nose, lower jaw, and flippers being usually held above the surface, although a little more appears at times according to the condition of the sea and the movements of the animal.

One has to be very close to get a shot at the head that will kill it. Many times the animal is wounded sufficiently to get out of reach of the hunter before it dies. I had very little difficulty in approaching sleeping seals close enough for a fair shot, but much in killing them. Fair shots that scattered the charge all about them, hitting the flippers, I firmly believe, and in some cases drawing plenty of blood, were usually without result, until I learned to fire directly at the head. Then the shots began to prove fatal; but even then, unless hit in a vital part, the animals got away, though bleeding freely. At first I blamed the ineffectual firing on the cartridges, but the cartridges proved all right as soon as I learned to aim at the head and not at the animal as a whole.

I learned after some experiments that seals which dashed away apparently uninjured were usually hurt, and after following them persistently, at great labor to the boat pullers, found that they were bleeding.

I believe that the majority of sleeping seals fired at are struck. The number killed at the islands with buckshot in them bears out this claim to a considerable extent. I do not see how an ordinary marksman can shoot at so large a target as a seal at short range with a double-barrel gun loaded with 21 buckshot without striking some of the exposed portions of the animal.

It is from the instantly killed that seals are secured; the wounded animal uses its death struggle to get out of reach. What proportion of the seals reaching the Pribilofs with shot in them bear to those which are fired at and escape (wounded, as I state above) is not known, but I believe that fully as many perish leaving no trace, as recover sufficiently to reach the islands.

Feeding seals shot when raising their heads about the boats from curiosity are more likely to be killed instantly than sleeping seals, but they sink more quickly. A clear shot at the head is afforded which knocks the life completely out of them, and the rest of the body being under water at the time it would seem that the pressure upon the limp body forces the air from it. As a rule, seals killed instantly, when the head is entirely clear of the water, go down quickly, sinking stern foremost. Sleeping seals killed when the head is low in the water float for a time, the head settling into the water first, the air is retained in the body and it floats. I shot a seal off Quadeloupe Island in May when it raised its head close to the boat, killing it instantly. It sank before we could reach it with the gaff, and continued sinking, stern first, as we could plainly see far below in the clear water.

Another illustration of the wastefulness of the pelagic sealing might be found in the number of cartridges expended. During the work of the *Corwin* no record of this kind was kept. The hunter usually carried two or three dozen cartridges, which were, as a rule, expended before they returned to the ship. The number of seals lost by sinking, number wounded, and number secured were recorded.

Repeated firing from the boats was often heard on board ship, and a large number of empty shells would be returned, when comparatively few seals were definitely reported as secured, lost, or wounded, all other shots being supposed to be misses. I do not think this feature has received proper consideration. The hunters were certainly average marksmen, and it is my belief that the great majority of the sleeping seals fired at were struck. The guns used were 10-bore Parkers, loaded with 21 buckshot. Time after time I have seen the heavy charge strike about the sleeping seal fully expecting to see it killed, when, to my utter surprise, it would dive and come up beyond our reach. It is incredible that the great number of seals thus escaping were uninjured. How can one always find traces of blood or signs of injury when the frightened animal is retreating at a rate so rapid that it is soon out of sight, and especially as its course is mainly under water and it only appears at the surface with a porpoise-like leap to catch its breath and then dives again?

C. H. TOWNSEND.

ADDITIONAL TESTIMONY.

The foregoing testimony is that of scientists whose knowledge of the subject under discussion can not well be questioned. Speaking for myself, personally, I am pleased to find my own conclusions (based on a practical knowledge solely) so fully indorsed by learned and disinterested men.

In addition to the testimony already quoted, however, and in order to strengthen the position taken, I append to my report the testimony of statesmen, jurists, scientists, naturalists, shipmasters, sealers, seal hunters, pelagic sealers, naval officers (American and British), merchantmen, seamen, Indian hunters, native sealers, Treasury agents, company agents, British and American Bering Sea Commissioners, fur traders, furriers, fur experts, customs officers, and men of all classes, native and foreign, friends and enemies, who have had either the practical experience, the general information, or the scientific knowledge to warrant them in making sworn statements on the subject at issue; and a careful reading of the testimony introduced will show that their views in general are in accord with mine, and sustain my position in every particular.

The quotations above referred to are taken from the American case and counter case.

RETROSPECTIVE AND EXPLANATORY.

So much has already been said in contradiction of the theories advanced by honest but mistaken men about overdriving of the young males and its consequent result of impotency, of stampedes on the rookeries, and epidemics in the herd, by which so many pups were supposed to be destroyed annually during the past decade, it is necessary for a correct understanding of the contention that I go back a few years and give a sketch of the causes which gave rise to such, until then, unheard of theories which have been the direct cause of more than one-half the troubles growing out of the fur-seal question in Bering Sea.

As already shown by the testimony of Messrs. H. H. McIntyre, T. F. Morgan, Daniel Webster, J. C. Redpath, Dr. Noyes, and others who were on the seal islands for many years, it was not until 1886 the first unmistakable decrease of the seal herd was apparent. Had the facts been reported immediately to the Department and the true cause of such a sudden shrinkage shown, steps might have been taken which would have prevented further pelagic sealing, or at least an addition to the sealing fleet; but unfortunately an overzealous Treasury agent reported an increase of nearly 2,000,000 since Elliott's measurements and estimates, some fourteen years earlier; and again, in 1888, he tells the Department:

> I am happy to be able to report that although late landing the breeding rookeries are filled out to the lines of measurement heretofore made, and some of them much beyond those lines, showing conclusively that seal life is not being depleted, but is fully up to the estimates given in my report of 1887. (Report of G. R. Tingle, 1888.)

When that report was written, and before it was written, everyone on the seal islands knew there were indications of a decrease of the seal herd, and the employees of the lessees so reported at the time to the superintendent, Dr. H. H. McIntyre, who tells us:

> I repeatedly pointed out to our company and to the special Treasury agents during the seasons of 1887, 1888, and 1889 that the seals were rapidly diminishing, and that in order to get the full quota allowed by law we were obliged to kill, in increasing numbers in each of those years, animals that should have been allowed to attain greater size; and, finally, the catch of 1889 was mostly of this class. (See McIntyre to Jeffries, December 15, 1890, Appendix.)

Mr. Daniel Webster, the oldest and one of the most reliable and practical of sealers, tells, under oath:

In 1884 and 1885 I noticed a decrease, and it became so marked in 1886 that everyone on the islands saw it. This marked decrease in 1886 showed itself on all the rookeries on both islands. (See affidavit in Appendix.)

And Mr. J. C. Redpath, the local agent for the lessees, after an experience of twenty years on the islands, says:

As the schooners (pelagic hunters) increased, the seals decreased, and the lines of contraction on the rookeries were noticed to draw nearer and nearer to the beach, and the killable seals became fewer in numbers and harder to find. In 1886 the decrease was so plain that the natives and all the agents were startled. (Ibid.)

In 1889 the usual annual quota of 100,000 could not be found without taking 50,000 young seals whose skins did not average more than 4 pounds each.

It was then that the apparent and appalling suddenness of the decrease aroused in the minds of those who were neither practical sealers nor had definite knowledge of seal life on the rookeries doubts as to the true cause of the decrease, and of the actual conditions existing on the seal islands so soon after an official report had appeared affirming the fact of an increase of over 2,000,000 seals in fourteen years.

Theories, as numerous as the men who broached them, were launched forth to a still doubting world; from press and platform came an array of argument and statistics as erroneous as they were bewildering; and when the Treasury agent's reports reached the Department it was decided to send an extra special agent to the islands to thoroughly investigate the conditions existing there and if possible to find the cause of the sudden decrease of the fur-seal herd; and Mr. Henry W. Elliott was selected for that important work.

When, in 1890, Mr. Elliott reached the seal islands after an absence of fourteen years, and found only a scant one-fifth of the seals that he saw there in 1876, he impulsively and erroneously concluded that the driving of the young males from the hauling grounds was injurious to their healthy growth and full development; that it produced impotency and destroyed their usefulness as breeders on the rookeries, thus producing a dearth of breeding males and a surplus of barren cows, and, without a shadow of proof to sustain him, he made out a most elaborate report in which he labored to show the truth of his new and wonderful theory, and then felt personally hurt and wronged because the Government refused to indorse or approve it.[1]

Every enemy of the United States in both hemispheres, however, hailed it with delight, and quoted from it against us with much approbation until, after years of patient research and scientific investigation on the part of the United States and of Great Britain, it was demonstrated that Elliott was in error, and that pelagic sealing is the cause of the sudden and rapid destruction of the American fur seal.

In his overanxiety to prove his theory he persistently continues to reiterate the story of a time when no drives were made from a number of places on St. Paul Island where a great "reservoir of surplus male life" was held in reserve; but I will let him tell his own story:

In 1872–1874 when no driving was made from Southwest Point, Zapadnie, and all English Bay to the westward of Neahrpahskie Kammen, from Polavina, or anywhere between it and the hauling grounds of Lukannon, then there were reservoirs of

[1] See letter of Secretary of the Treasury, Appendix.

young male life which were not drawn upon or disturbed, from which a steady stream of new male blood for the breeding grounds could and did flow. (Elliott's report (Paris print), 1890, p. 237.)

Again, he says:

Nobody, in 1872, ever thought of such a thing as coming over from the village to make a killing at Zapadnie. (Ibid., p. 246.)

He continues:

I had this point in my thought during my studies in 1872–1874, but at that time no holluschickie were driven from Southwest Point, from Zapadnie, from Tonkee Mees or Stony Point, or from Polavinia—no seals were driven from these places where everybody admitted that full half of the entire number belonging to the islands, laid. (Ibid., 271.)

Then that immense spread of hauling ground covered by swarms of young male seals, at Zapadnie, at Southwest Point, at English Bay, beyond Middle Hill, west, at Polavinia, and over all that 8 long miles of beach and upland hauling ground between Lukannon Bay and Webster's house at Novastoshnah, all of this extensive sealing area was not visited by sealing gangs, or spoken of by them as necessary to be driven from. (Elliott's letter to the Secretary of the Treasury, report of 1890, p. iv.)

In 1872–1874 I observed that all the young male seals needed for the annual quota of 75,000 or 90,000, as it was ordered in the latter year, were easily obtained every season, between the 1st of June and the 20th of July following, from the hauling grounds of Tolstoi, Lukannon, and Zoltoi Sands—from these hauling grounds adjacent to the rookeries or breeding grounds of Tolstoi, Lukannon, Reef, and Garbotch. All of these points of supply being not more than 1½ miles distant from the St. Paul village killing grounds, the Zoltoi drive being less than 600 feet away. (Ibid.)

Therefore, when attentively studying in 1872–1874, the subject of what was the effect of killing annually 100,000 young male seals on these islands (90,000 on St. Paul and 10,000 on St. George), in view of the foregoing statement of fact, I was unable to see how any harm was being done to the regular supply of fresh blood for the breeding rookeries, since those large reservoirs of surplus male life, above named, held at least just half of the young male seal life then belonging to the islands—these large sources of supply were never driven from, never even visited by the sealers, and out of their overwhelming abundance I thought that surely enough fresh male seal life must, *did* annually mature for service on the breeding rookeries. (Ibid.)

That day in 1879, when it became necessary to send a sealing gang from St. Paul village over to Zapadnie to regularly drive from that hitherto untouched reserve, was the day that danger first appeared in tangible form since 1870—since 1857 for that matter. (Ibid.)

For the good of the public service the truth must be told; and that is that the official records of the drives and killings on the islands of St. Paul and St. George are in direct opposition to Mr. Elliott. They show that, beginning in 1871, there are no records of the daily killings for 1870—drives were made regularly from every hauling ground on the islands; and a close inspection will reveal the fact that an aggregate of 102 drives were made, before 1879, from Zapadnie or Southwest Bay, Polavinia or Halfway Point, and from English Bay, during the very period of which Mr. Elliott speaks when he tells us "they were never driven from, never even visited by the sealers."

For convenience of reference I quote from the official island records the daily drives and killings made between 1870 and 1879 from the three principal rookeries of which Mr. Elliott speaks so positively; and I think it will be sufficient to show every fair-minded man in the country that the large reservoir of "surplus male life" so often spoken of by Mr. Elliott was unknown to everyone else on the seal islands, and never had an existence outside his own fertile imagination.

Here are the drives made each year from 1871 to 1878, both inclusive, from the rookeries in question:

Year.	Zapadnie, or Southwest Bay.	Polavina, or Halfway Point.	English Bay.	Total.
1871	2	1	6	9
1872	1	1	11	13
1873	5	.....	7	12
1874	5	.....	10	15
1875	7	1	10	18
1876	6	1	4	11
1877	4	3	5	12
1878	4	3	5	12
Total	34	10	58	102

(See Senate Ex. Doc. No. 107, Fifty-second Congress, second session, Appendix.)

In an attempt to show that it was not until 1879 that drives were made from certain rookeries which he is pleased to call a "large reservoir of male life," which had not been disturbed or touched before 1879, Mr. Elliott quotes the Island Journal as follows:

Page 92, June 9, 1879: Antone Melovedov started with a gang to make a drive at Halfway Point, Polavina. (Elliott's report (Paris print), 158.)

Page 93, June 10, 1879: The drive to-day (at Polavina) resulted in the taking of 1,118 skins. (H. G. Otis.) (Ibid., 159.)

Page 93, June 11, 1879: The drive from Southwest Bay (Zapadnie) to-day, and 1,462 skins taken. (H. G. Otis.) (Ibid., 159.)

There is not a word in the foregoing, nor is there a word in the journal, to show that the drives mentioned were the first that were made from those rookeries, but Mr. Elliott is determined to show that overdriving is the principal cause of the destruction of the seals, and he continues:

From this day (June 11, 1879) on to the close of that sealing season's work, July 20, Zapadnie was driven often, and Polavina also; but in 1880 only one drive was made from this reservoir at Zapadnie, * * * and, again in 1881, it was not driven from at all, and only one drive that year made from the Polavina reserve. (Elliott's report for 1890, p. 159.)

Here the gentleman is again in error, for I find that drives were made from Zapadnie or Southwest Bay on May 19 and June 7, 1879, only a few days before he discovered that the first drive had been made on the 9th of June.

And in 1880 four drives were made from Zapadnie and five from Polavina, and in 1881 six drives were made from Zapadnie and five from Polavina, as the following table, taken from the island records, will show:

Zapadnie or Southwest Bay:

1880.	Drives.
May 14	1
June 8	1
12	1
16	1
Total	4
1881.	
June 7	1
15	1
28	1
July 6	1
14	1
Dec. 7	1
Total	6

Polavina or Halfway Point:

1880.	Drives.
June 14	1
21	1
28	1
July 5	1
30	1
Total	5
1881.	
June 10	1
17	1
24	1
July 2	1
8	1
Total	5

(See Senate Ex. Doc. No. 107, Fifty-second Congress, second session, Appendix.)

Many inaccuracies are to be found in Mr. Elliott's report of 1890, due, perhaps, to the hurried manner in which it was prepared, and the bitterness, excitement, and many disappointments attending it all the way through; nearly all of which were of a private character, and which can not well be made public, even had I a desire to do so, which I have not by any means. One instance more and I am done.

In his "field notes" on the state of the rookeries in 1890, Mr. Elliott writes:

June 19.—Not a single holluschak of any age whatsoever on Zoltoi Sands this day, and there has not been a killable seal thus far there this season. (Elliott's report, 1890 (Paris print), pp. 263-264.)

June 22.—Fine weather for seals to haul in continues, but the seals do not haul; not a single seal on Zoltoi Sands this morning; has not been a holluschak there yet. (Ibid., p. 264.)

June 22.—Now, not a single young male seal has hauled on Zoltoi thus far this season. (June 22, 6 a. m.) (Ibid., p. 265.)

June 22.—Not a seal on Zoltoi Sands this morning, and not one since during the day. (Ibid., p. 266.)

June 22.—Not a holluschak or any other class of fur seal on Zoltoi Sands this morning or noon. (Ibid., p. 274.)

June 30.—Not a holluschak on Zoltoi Sands to-day. (Ibid., p. 276.)

July 8.—Also, not a holluschak has as yet hauled upon Zoltoi Sands. (Ibid., p. 284.)

July 19.—I observe that not a single young male is on Zoltoi Sands this morning—not one has hauled there thus far this season. (Ibid., p. 295.)

The official records of the drives and killings made on the seal islands in 1890 are on file in the Treasury Department, and a copy will be found in the appendix to this report. I quote from the records the following drives from Zoltoi in 1890: "May 24, 1 drive; July 19, 1 drive."

According to Mr. Elliott there was not a seal on Zoltoi on the 19th of July; according to the island records a drive was made from Zoltoi on that very same day.

Another error of like importance are the two passages in the same report which read as follows:

The importance of understanding this fact as to the readiness of the holluschickie to haul promptly out on steadily "swept" ground, provided the weather is inviting, is very great, because when not understood, it was deemed necessary, even as late as the season of 1872, to "rest" the hauling grounds near the village (from which all the driving has been made since), and make trips to far-away Polavina and distant Zapadnie, an unnecessary expenditure of human time and a causeless infliction of physical misery upon phocine backs and flippers. (Elliott's report, 1890, p. 122.)

Nobody in 1872 ever thought of such a thing as coming over from the village to make a killing at Zapadnie. (Ibid., p. 246.)

At page 122 Mr. Elliott remembered and acknowledged that drives were made in 1872 from Zapadnie and Polavina, and the records confirm his story.

He might have included 1871, for the records show drives were made from both places in that year also.

At page 246 he seems to have forgotten some of what he had already written, for he gravely tells us: "Nobody in 1872 ever thought of such a thing as coming over from the village to make a killing at Zapadnie."

Enough has been said, I think, for the purpose of showing the public how it happens, sometimes, that matters of small moment in themselves may beget questions so momentous that it requires international arbitration to settle them; and that the report of one overzealous officer and the official report of another, made in anger and bitterness, have cost the United States a whole fur-seal herd, worth, originally, nearly $100,000,000.

So numerous and so palpable were the inaccuracies all through the

report that Mr. Foster, the then Secretary of the Treasury, refused to have it published, and subsequently, in a letter to the State Department, gave good reasons for such action.[1]

That the theory of injury of the young males to the extent of impotency by driving on the islands, so forcibly presented by Mr. Elliott, has been denied by naturalists generally and disproved by facts adduced by both the scientific and the practical world, has already been amply demonstrated; that Mr. Elliott himself, in several very able papers subsequently written, has adopted the views of every scientist of note, from our own American, Dr. Merriam, to Prof. T. H. Huxley, is satisfactory evidence, I think, that the bitter contention is practically ended, and the claim of the United States, that pelagic sealing is the cause of the decrease of the seal herd, is generally acknowledged.

PELAGIC SEALING AND DIPLOMACY.

When the actual condition of the seal herd became known in 1890–91, and the ravages of the pelagic sealer could no longer be hidden, it was suggested that arbitration be tried for a final adjustment of all differences between the United States and the pelagic sealer. The seals being born and reared on United States territory, and never landing anywhere else, it was naturally supposed they were the property of the United States, and until their skins became commercially and exceedingly valuable no one questioned our absolute ownership of the herd. So sure were we of our unquestioned title to the seals that, on taking possession of our newly acquired Territory of Alaska, Congress enacted laws for the protection of Alaskan interests and particularly for the protection of all "fur-bearing animals." A few sections of the statute law, in the light of subsequent events, are interesting:

SEC. 1960. It shall be unlawful to kill any fur seal upon the islands of St. Paul and St. George, or in the waters adjacent thereto, except during the months of June, July, September, and October in each year; and it shall be unlawful to kill such seals at any time by the use of firearms or by other means tending to drive the seals away from those islands; but the natives of the islands shall have the privilege of killing such young seals as may be necessary for their own food and clothing during other months, and also such old seals as may be required for their own clothing and for the manufacture of boats for their own use; and the killing in such cases shall be limited and controlled by such regulations as may be prescribed by the Secretary of the Treasury.

SEC. 1961. It shall be unlawful to kill any female seal, or any seal less than one year old, at any season of the year, except as above provided; and it shall also be unlawful to kill any seal in the waters adjacent to the islands of St. Paul and St. George, or on the beaches, cliffs, or rocks where they haul up from the sea to remain; and every person who violates the provisions of this or the preceding section shall be punished for each offence by a fine of not less than two hundred dollars nor more than one thousand dollars, or by imprisonment not more than six months, or by both such fine and imprisonment; and all vessels, their tackle, apparel, and furniture, whose crews are found engaged in the violation of either this or the preceding section, shall be forfeited to the United States.

SEC. 1962. For the period of twenty years from the first of July, eighteen hundred and seventy, the number of fur seals which may be killed for their skins upon the island of St. Paul is limited to seventy-five thousand per annum; and the number of fur seals which may be killed for their skins upon the island of St. George is limited to twenty-five thousand per annum; but the Secretary of the Treasury may limit the right of killing if it becomes necessary for the preservation of such seals, with such proportionate reduction of the rents reserved to the Government as may be proper; and every person who knowingly violates either of the provisions of this section shall be punished as provided in the preceding section.

SEC. 1967. Every person who kills any fur seal on either of those islands, or in the waters adjacent thereto, without authority of the lessees thereof, and every person

[1] See letter in Appendix.

who molests, disturbs, or interferes with the lessees, or either of them, or their agents, or employees, in the lawful prosecution of their business, under the provisions of this chapter, shall for each offence be punished as prescribed in section nineteen hundred and sixty-one, and all vessels, their tackle, apparel, appurtenances, and cargo, whose crews are found engaged in any violation of the provisions of section nineteen hundred and sixty-five to nineteen hundred and sixty-eight, inclusive, shall be forfeited to the United States.

SEC. 1968. If any person or company, under any lease herein authorized, knowingly kills, or permits to be killed, any number of seals exceeding the number for each island in this chapter prescribed, such person or company shall, in addition to the penalties and forfeitures herein provided, forfeit the whole number of the skins of seals killed in that year, or, in case the same have been disposed of, then such person or company shall forfeit the value of the same.

Thus for a quarter of a century did the United States throw every possible safeguard of law around the seals and other fur-bearing animals of Alaska, which, under the fostering care of the Government, and the good management of the lessees on the seal islands, produced the grand results of "growth and expansion" in the herd and on the rookeries, sworn to by so many disinterested witnesses who have had ocular knowledge of every fact to which they testified, while during the same period of time the sea otter, which, owing to its pelagic habits, was necessarily left to the tender mercies of the pelagic hunter, who knows no law higher or holier than avarice and selfishness, has been practically exterminated. Laws were enacted from time to time as occasion required them; regulations in accordance with law were made annually for the proper enforcement of the statutes and for the betterment of the natives of the seal islands and the industry upon which they depended for a livelihood, and on which millions of civilized people depended for one of the most beautiful, valuable, and useful furs known to commerce.

Who else, among the thousands now claiming an interest in the seals, ever offered to protect them as we have done?

Where was the pelagic sealer in the days gone by, when the United States were spending millions of money to protect the seal islands, and when our statutes of protection to the female seal were being enacted? Echo answers, "Where?"

Immediately after the treaty of cession, and before we could bring order out of chaos, the marauder of those days landed on the seal islands and slaughtered seals indiscriminately, killing a quarter of a million in one season, and only stopping the ruinous work when the salt was exhausted.

Afterwards the United States statutes were enforced by Government agents sent to the islands for the purpose, and, until 1884, the seals increased in numbers and in value under the fostering care of the Government.

For a period of thirteen years, from 1871 to 1884, inclusive, we had taken 100,000 male seals annually without a sign of decrease or diminution on the rookeries or the slightest injury to the herd, but, on the contrary, a well-known and generally acknowledged growth and expansion.

Dr. H. H. McIntyre, general superintendent for the Alaska Commercial Company at the seal islands during the entire term of their twenty years lease, when writing confidentially to his company in 1889, says:

The breeding rookeries from the beginning of the lease to 1882 or 1883 were, I believe, constantly increasing in area and population, and my observations in this direction are in accordance with those of Mr. Morgan, Mr. Webster, and others, who have been for many years with me in your service, and of the late special Treasury agent, J. M. Morton, who was on the islands from 1870 to 1880. (See letter in Appendix.)

In 1884 an increased fleet of pelagic sealers appear upon the scene, and with vessels specially designed and fully equipped for the work, they follow the seals from year's end to year's end, shooting, spearing, and ripping up all they overtake, without a thought or care for age, sex, or condition; and immediately the rookeries show signs of diminution to those who, like Morgan and Webster, had the experience and the opportunity to observe it.

Dr. McIntyre, in the letter already quoted, continues:

The contrast between the present condition of seal life and that of the first decade of the lease is so marked that the most inexpert can not fail to notice it. Just when the change commenced I am unable from personal observation to say, for, as you will remember, I was in ill health, and unable to visit the islands in 1883, 1884, and 1885. I left the rookeries in 1882 in their fullest and best condition, and found them in 1886 already showing a slight falling off, and experienced that year for the first time some difficulty in securing just the class of animals in every case that we desired. * * * For the cause of the present diminution of seal life we have not far to look. It is directly traceable to the illicit killing of seals of every age and sex during the last few years in the waters of the North Pacific and Bering Sea. We are in no way responsible for it. During the first thirteen years of the lease comparatively few seals were killed by marauders, and we were then able, * * * under our careful management, to produce a decided expansion of the breeding rookeries.

Dr. McIntyre's letter was written in 1889, when the effects of pelagic sealing first startled the civilized world, and his statements were met with doubt or open denial from all who were ignorant of the situation, and with the charge, from pelagic sealers and their apologists, that the Americans had destroyed the seals by overdriving on land.

The absurdity and the injustice of this idle charge have been shown in many ways during the discussion of the seal question, but it is reiterated again and again by those who have established what they are pleased to call an "industry," the chief corner stone of which is the killing of the female seals at sea—of seals about to become mothers, from whose suddenly ripped bellies the unborn young are cut, or torn out alive and thrown into the ocean—of mothers whose young have been left upon the rookeries during their absence on the feeding grounds, left to die of slow starvation where, as Captain Coulson truly says, "the shores are lined with emaciated, hungry little fellows, with their eyes turned toward the sea, uttering plaintive cries for their mothers, which were destined never to return."

And, hard as it may seem, and difficult to believe though it may be, it was with this same pelagic sealer, or for his sake at least, we were asked to arbitrate the question of our exclusive right of property in the seal herd, and of our right to protect them outside of the ordinary, "3 miles," limit from the land upon which they were born and which they made their home.

Even Mr. Elliott was induced to lend his influence to the scheme for arbitration, and, after his return from the seal islands in 1890, we find him addressing Mr. Blaine, who was then Secretary of State, as follows:

Let me again, just before I leave, earnestly urge that you do not hesitate to invite an English commission to meet us, and jointly visit and view the Pribilof seal rookeries next summer at the height of the breeding season in July. That wreck and ruin thereon, which I saw last summer, will be there, and still more pronounced on the same ground next year (1891); it will not fail to arouse the interest and sympathy of the British agents, and the sight of these dwindling herds will be a most eloquent and satisfactory proof of the correctness of your position taken in your leading letter of January 22, 1890, and upon the truth of which your whole argument in the Bering Sea question rests. It is not quite fair to ask John Bull to believe me now, * * * but I assure you that if he gets up there he will soon see enough to make him respect me, and be our sworn friend in cooperating to save the fur seal from impending extermination. Indeed, he should be allowed to see for himself now; it is only manly and fair in us to allow him to do so under the circumstances. (Elliott to Blaine, December 19, 1890.)

The English commission was invited as suggested by Mr. Elliott; the commissioners arrived at the seal islands in the latter part of July, 1891; they visited the rookeries and saw the "wreck and ruin thereon;" they noted the "dwindling herds," and they saw new grass growing on acres of ground where, a few years earlier, hundreds of thousands of seals swarmed in season and brought forth their young. The commissioners found acres of ground covered with dead pup seals as thick as they could lie—"emaciated little fellows"—whose mothers had gone out to the feeding banks, and were captured by the pelagic sealers.

Whether the visit induced them to believe or respect Mr. Elliott remains to be seen, but it certainly did not "arouse their interest or sympathy" for the seals, or for the nation that claimed the right to protect them. Nor did it make them "our sworn friends in cooperating to save the fur seal from impending extermination."

On the contrary, though, they adopted Mr. Elliott's own exploded theories of overdriving, impotency, dearth of bulls, lack of young male blood, redriving, scraping the rookeries, stampeding, and added two or three more of their own, almost as absurd and nonsensical; and they wound up their sympathetic and impartial labor in behalf of protection for fur seals by the following regulations suggested by the British Bering Sea commissioners:

(B) Specific Scheme of Regulations Recommended.

155. In view of the actual condition of seal life as it presents itself to us at the present time, we believe that the requisite degree of protection would be afforded by the application of the following specific limitations at shore and at sea:

(*a*) The maximum number of seals to be taken on the Pribilof Islands to be fixed at 50,000.

(*b*) A zone of protected waters to be established, extending to a distance of 20 nautical miles from the islands.

(*c*) A close season to be provided, extending from the 15th of September to the 1st of May in each year, during which all killing of seals shall be prohibited, with the additional provision that no sealing vessel shall enter Bering Sea before the 1st of July in each year.

156. Respecting the compensatory feature of such specific regulations, it is believed that a just scale of equivalency as between shore and sea sealing would be found, and a complete check established against any undue diminution of seals, by adopting the following as a unit of compensatory regulation:

For each decrease of 10,000 in the number fixed for killing on the islands, an increase of 10 nautical miles to be given to the width of protected waters about the islands. The minimum number to be fixed for killing on the islands to be 10,000, corresponding to a maximum width of protected waters of 60 nautical miles.

157. The above regulations represent measures at sea and ashore sufficiently equivalent for all practical purposes, and probably embody or provide for regulations as applied to sealing on the high seas as stringent as would be admitted by any maritime power, whether directly or only potentially interested.

158. As an alternative method of effecting a compensatory adjustment of the stringency of measures of protection, it is possible that some advantages might be found in the adoption of a sliding scale of length for the season of sealing at sea, with a fixed width of zone of protection about the islands.

In this case it is believed that, in correspondence with a decrease of 10,000 seals killed upon the breeding islands, the length of the sealing season at sea might be curtailed by seven days, such curtailment to be applied either to the opening or closing time of the sealing season.

159. It may be objected to the principle involved in any correlative regulation of shore and sea sealing that it would be impossible in any particular year to make known the number fixed for killing on the islands in time to secure a corresponding regulation of pelagic sealing. As a matter of fact, however, if the condition of the breeding rookeries called for any change, it should be possible to fix this number with sufficient precision a year in advance, while, on the other hand, the general effect would be almost equally advantageous if the number killed on the islands in *any* one year were employed as the factor of regulation for pelagic sealing in the following year.

160. While a zone of protection has been spoken of as the best method of safely guarding the vicinity of the breeding islands, it is to be borne in mind that such an area might be defined for practical purposes as a rectangular area bounded by certain lines of latitude and longitude. Even in dense fog, and therefore comparatively calm weather, an arrested vessel could be anchored with a kedge and warp until the weather cleared, according to frequent custom. The special advantages of a concentric zone appear to be that it is more directly in conformity with the object in view, and that in fine weather the visibility or otherwise of the islands themselves might serve as a rough guide to sealers.

161. The restriction of the number of seals killed on the breeding islands, appropriate safeguards being provided, admits of very considerable precision and requires no special explanation. That the restriction of the number taken at sea may be accomplished practically and with all necessary certainty, and that the means of control available in the case of this branch of the sealing industry are sufficient, is clearly shown by the successful application of measures such as these here proposed, to the Jan-Mayen and Newfoundland hair-seal fisheries, as well as of those based on like principles, which are generally employed in protecting fish and game.

(C) Methods of Giving Effect to Regulations.

162. The means suited to secure the practical efficiency of regulations at sea are generally indicated by those adopted in the instances just cited. It is unnecessary to formulate these here in full detail, but the following suggestions are offered as pointing out those methods likely to prove most useful in the particular case under consideration:

(1) Statutory provisions should be made, declaring it unlawful to hunt or take fur seal during the close season by subjects or vessels of the respective powers.

(2) The time of commencement of the sealing season should be further regulated by the date of issuance of special customs clearances and of licenses for sealing, and preferably by the issuance of such clearances or licenses from certain specified ports only.

(3) As elsewhere explained, the regulation of the time of opening of the sealing season is the most important, and the closing of the season is practically brought about by the onset of rough weather in the early autumn. If, however, it be considered desirable to fix a precise date for the close of sea sealing in each year, this can be done, as in the case of the date of sealing under the Jan-Mayen convention.

(4) The liability for breach of regulations, of whatever kind, should be made to apply to the owner, to the master, or person in charge of any vessel, and to the hunters engaged on the vessel.

(5) The penalty imposed should be a fine (of which one-half should go to the informant), with possibly, in aggravated cases or second offenses, the forfeiture of the catch and of the vessel itself.

(6) To facilitate the supervision of the seal fishery and the execution of the regulations, all sealers might, in addition, be required to fly a distinctive flag, which might well be identical with or some color modification of that already adopted for the same purpose by the Japanese Government.

(D) Alternative Methods of Regulation.

163. Although the general scheme of measures above described appears to us, all things considered, to be the most appropriate to the actual circumstances, measures of other kinds have suggested themselves. Some of these, though perhaps less perfectly adapted to secure the fullest advantages, recommend themselves from their very simplicity and the ease with which they might be applied. Of such alternative methods of regulations, three may be specially referred to:

(1) *Entire prohibition of killing on one of the breeding islands, with suitable concurrent regulations at sea.*

164. The entire reservation and protection of one of the two larger islands of the Pribilof group, either St. Paul or St. George Island, might be assured; such island to be maintained as an undisturbed breeding place, upon which no seals shall be killed for any purpose. On the remaining island the number of seals killed for commercial purposes would remain wholly under the control of the Government of the United States.

In consideration of the guaranteed preservation of a breeding island with the purpose of insuring the continuance of the seal stock in the common interest, a zone of protected waters might be established about the Pribilof Islands, and pelagic sealing might be further controlled and restricted by means of a close season, including the early spring months, or by a protected area to the south of the Aleutian Islands, defined by parallels of latitude, such provisions at sea to have, as far as possible, quantivalent relation to those established on the breeding islands.

(2) *Recurrent periods of rest.*

165. This implies the provision of a period of rest or exemption of all seals from killing, both at sea and on shore, to extend over a complete year at such recurrent intervals as may be deemed necessary.

Such a period of rest might be fixed in advance for every fifth, or possibly as often as every fourth year, and be made to form a part of a general scheme imposing limitation of number of seals killed on the islands in intervening years, together with restriction by time or by area of pelagic sealing.

While proximately equal in effect on both shore and sea killing a period of rest of this kind would, in other respects, cause some inconvenience, by its interruption of the several industries, and this, though minimized by the fact that the date of occurrence of the year of rest would be known in advance, would not be wholly obviated by this circumstance.

(3) *Total prohibition of killing on the breeding islands, with concurrent strict regulation of pelagic sealing.*

166. While the circumstance that long usage may in a measure be considered as justifying the custom of killing fur seals on the breeding islands, many facts now known respecting the life history of the animal itself, with valid inferences drawn from the results of the disturbance of other animals upon their breeding places, as well as those made obvious by the new conditions which have arisen in consequence of the development of pelagic sealing, point to the conclusion that the breeding islands should, if possible, remain undisturbed and inviolate.

167. If this view should be admitted, and particularly if the United States and Russia, as the owners of the principal breeding islands of the North Pacific, should agree to cooperate in entirely prohibiting all killing of seals on these islands, and in guarding and protecting the breeding places upon them, it should be possible to obtain, in consideration of such care exercised in the common interest, an international assent to measures regulating sea sealing of any required degree of stringency, including certain special rights of supervision by the powers mentioned.

168. It might, for example, under such circumstances, be provided—

(1) That all sealing vessels should be registered, and should take out special licenses at one or other of certain specified ports, as, for instance, Victoria, Port Townsend, Honolulu, Hakodate, and Vladivostock.

(2) That such annual clearances or licenses be not issued before a given date (say 1st of May), and that certain license fees be exacted. Such license fees to be collected by the customs authorities of the licensing Government, and to be eventually transferred, in whole or in part, proportionately, to the Governments protecting the breeding islands, to go toward meeting the cost of this protection.

(3) That no vessel should seal in Bering Sea before some fixed date (say 1st of July) in each year, and that vessels intending to seal in Bering Sea should report either to the United States or to the Russian authorities on or after that date at named ports, such as Unalaska or Petropavlovsk.

(4) That all duly licensed sealing vessels should be required to fly a distinctive flag, and that any unlicensed vessel found engaged in sealing should be subject to certain penalties.

(5) That a zone of protected waters should be established about the breeding islands, within which no sealing should under any circumstances be permitted.

(E) INTERNATIONAL ACTION.

169. In the foregoing remarks on the measures available for the protection and preservation of the fur seal of the North Pacific, reference is made throughout especially to the eastern part of that ocean, including more particularly the area comprised in the range of those fur seals of which the summer haunts and breeding places are about or on the Pribilof Islands, and of which the winter home is found especially off the coast of British Columbia. It is evident, however, that the same remarks and recommendations apply equally to those fur seals which in summer center about the Commander Islands and in winter frequent the seas off the coast of Japan.

170. It may be stated, further, that no system of control can be considered as absolutely complete and effective which does not include under common regulations all parts of the North Pacific, and that the facility of execution of measures and their efficiency would, under any system of regulations, be much increased by the concurrent action of Great Britain, the United States, Russia, and Japan, as indicated in the message of the President of the United States in 1889. Apart from the fact that vessels prevented from sealing at given dates in certain areas might at these times frequent other waters in increased numbers, the circumstance that there is a

certain though not fully known interrelation and interchange of seals between the eastern and western breeding islands of Bering Sea points very clearly to the advisability of such cooperation in protection. (Report of British Bering Sea Commissioners, p. 25.)

The most casual observer will see at a glance that the commissioners' suggestions are all in favor of the pelagic sealer and his "industry," and against the United States and the seals. That the public at large may see this as I see it, I will briefly review a few of the most prominent points suggested.

The commissioners say:

The maximum number of seals to be taken on the Pribilof Islands to be fixed at 50,000.

That is to say, the United States must agree to reduce their catch on land one half, to begin with, and the suggestion, remember, was made long after it was known that the pelagic sealers had captured 78,000 seals in 1891.

They continue:

A zone of protected waters to be established, extending to a distance of 20 nautical miles from the islands.

As the largest catches are made at distances of from 80 to 200 miles from the islands, and as the commissioners were well aware of that fact when they made the suggestion, its worthlessness may be understood so far as the protection and safety of the seals go.

Again, they suggest:

A close season to be provided, extending from the 15th of September to the 1st of May in each year, during which all killing of seals shall be prohibited, with the additional provision that no sealing vessel shall enter Bering Sea before the 1st of July in each year.

As the killing season never did open on the islands till June, and always closed on or before August 10 (excepting the few seals killed from time to time for natives' food), and as it is from May to October that protection is absolutely necessary for the preservation of the seal herd; and as the pelagic sealer hardly ever enters Bering Sea before July it is difficult to see how the "suggestion" could benefit the United States or save the seals.

The next "suggestion" deserves careful attention, for it is the keynote of the whole superstructure raised by the commissioners, who say:

Respecting the compensatory feature of such specific regulations, it is believed that a just scale of equivalency as between shore and sea sealing would be found, and a complete check established against any undue diminution of seals, by adopting the following as a unit of compensatory regulation: For each decrease of 10,000 in the number fixed for killing on the islands, an increase of 10 nautical miles to be given to the width of protected waters about the islands. The minimum number to be fixed for killing on the islands to be 10,000, corresponding to a maximum width of protected waters of 60 nautical miles.

Here they make the pelagic sealer the senior partner in the fur-seal "industry," and the repressive part of the "suggestion" is intended for the United States only.

The situation at the start is to be something like this: The United States are to kill not to exceed 50,000 seals, and the pelagic sealer is not to approach the breeding islands nearer than 20 nautical miles. Then for every additional 10 miles we would remove the pelagic sealer we must reduce our catch on shore by 10,000, so that by the time he is 60 miles away our maximum catch is to be 10,000.

The first thought that suggests itself here is, What would happen were we to ask him for a protected zone of 70 miles from the seal

islands? Logically, we would have to stop killing on the islands altogether and turn them into breeding grounds for the use of a class of sportsmen who are fond of the manly art of hunting gravid female seals and cutting out their unborn young.

Turning to the "alternative methods of regulation" suggested by the commissioners we find that they, too, were possessed of the same thought, for they "suggest:"

Entire prohibition of killing on one of the breeding islands, with suitable concurrent regulations at sea. The entire reservation and protection of one of the two larger islands of the Pribilof group, either St. Paul or St. George Island, might be assured; such island to be maintained as an undisturbed breeding place, upon which no seals shall be killed for any purpose. On the remaining islands the number of seals killed for commercial purposes would remain wholly under the control of the Government of the United States.

In consideration of the guaranteed preservation of a breeding island, with the purpose of insuring the continuance of the seal stock in the common interest, a zone of protected waters might be established about the Pribilof Islands, * * * such provisions at sea to have, as far as possible, quantivalent relation to those established on the breeding islands. (See section 164.)

Growing bolder and bolder as they proceed they finally come forward with a suggestion, which, for downright coolness, may well claim "first place" among all the cool propositions made in any age or country; it is nothing less than the "total prohibition of killing on the breeding islands, with concurrent strict regulation of pelagic sealing."

Here, at last, the mask is thrown off and the commissioners stand forth in their true character of "advocates" for the pelagic sealer and apologists for his horrible methods.

It does not take long to get at the meaning of the "suggestions" offered, for a careful reading shows at once the whole animus of the thing is to prevent the killing of seals on the seal islands, and to turn the whole herd over to the pelagic sealer.

Had the most heartless of all the pelagic sealers been given carte blanche to write suggestions, the adoption of which would inure to his own benefit, he could not improve on those of the British Bering Sea commissioners.

This may seem to be a hard saying, but, from the testimony given by the pelagic sealers themselves, it is well known that the killing of female seals anywhere is sure destruction to the herd; and the British commissioners have admitted it to be on more than one occasion.

Speaking of the indiscriminate killing of the seals at sea, they say:

But it is unfortunately the case that at certain seasons considerable numbers of gravid females are thus killed, and this killing is deprecated by the better classes of the pelagic sealers themselves, not alone on grounds of humanity, but because they see clearly that it is unduly destructive to the industry in which their fortunes are embarked. (Report of British Bering Sea commissioners, section 633, p. 109.)

And yet the gentlemen who say so are the same men who have "suggested" the "total prohibition of killing on the breeding islands" and the turning over of the seals to indiscriminate slaughter.

The commissioners were instructed to ascertain:

First. The actual facts as regards the alleged serious diminution of seal life on the Pribilof Islands, the date at which such diminution began, the rate of its progress, and any previous instance of a similar occurrence.

Second. The causes of such diminution; whether, and to what extent, it is attributable—

(*a*) To a migration of the seals to other rookeries.

(*b*) To the method of killing pursued on the islands themselves.

(*c*) To the increase of sealing upon the high seas, and the manner in which it is pursued.

And then they were admonished as follows:

I need scarcely remind you that your investigation should be carried on with strict impartiality, that you should neglect no sources of information which may be likely to assist you in arriving at a sound conclusion, and that great care should be taken to sift the evidence that is brought before you.

It is equally to the interest of all the Governments concerned in the sealing industry that it should be protected from all serious risk of extinction in consequence of the use of wasteful and injudicious methods. (British Bering Sea Commissioners' report, p. 2.)

To which they replied as follows:

To the Queen's Most Excellent Majesty:

May it please Your Majesty, we, Your Majesty's commissioners, appointed to undertake an inquiry into the condition of seal life and the precautions necessary for preventing the extermination of the fur-seal species in Bering Sea and other parts of the North Pacific Ocean, beg to submit the following report. * * *

Wherefore, in carrying out the terms of our commission, it has been our object to acquire and record the most complete information available, in order to promote, in the true interests of all concerned an equitable, impartial, and mutually satisfactory adjustment of the questions at issue. (British Bering Sea Commissioners' report, p. 3.)

When Mr. Elliott was urging the appointment of a joint commission, as the remedy for all our troubles on the seal islands, he addressed the Secretary of State as follows:

NOVEMBER 22, 1890.

MY DEAR MR. BLAINE: * * * We must take some of the best British representation up to the islands and let it see the wreck and ruin thereon.

I have no fear of the result; these Englishmen will return our friends, and work in harmony with us in the labor of saving these anomalous interests from their impending ruin.

I believe that subsequent events have shown him that his faith was misplaced, to say the least, unless we can fully appreciate the kindness with which they propose to prohibit all killing on the islands and assume the whole burden themselves.

Had they suggested the prohibition of all pelagic sealing and an even division between the nations interested of the burdens, expenses, and proceeds resulting from a strict and constant protection of the breeding islands there would be some semblance of justice and right as well as a desire to perpetuate the seals indefinitely; but the suggestion that the United States shall be forbidden to kill seals ashore and that the islands must be turned into breeding grounds for the sake of the pelagic sealer is so repugnant to common sense and decency that were not the commissioners' report at my hand I should not believe they could have been guilty of making such a suggestion under any circumstances, but especially under the plea of protecting and perpetuating the fur seals.

Had they attempted to prove the wastefulness of present methods, or had they quoted the testimony of one honest and disinterested person to show that American management of the seals on the islands had ever been inimical to their increase and improvement, there would be some excuse for the suggestions offered, but it was beyond their power to produce testimony of that sort.

Therefore, I deem the remarks of the American counsel at Paris on this point as most just and opportune, and as they express my own views much better than my own feeble words can possibly do it I quote them as follows:

We are reluctant to make any reference to motives; but where opinions are, as in this case, made evidence, the question of good faith is necessarily relevant. Why is it that these commissioners have chosen to disregard the plain dictates of reason and natural laws which they were bound to accept, and to recommend some cheap devices in their place, when they so clearly perceived those dictates? We are not permitted to think that this was in conscious violation of duty, if any other explana-

tion is possible. The only apology we can find comes from the fact, clearly apparent upon nearly every page of their report, that the predominating interest which they conceived themselves bound to regard was not the preservation of the seals, but the protection of the Canadian sealers. This explanation at once accounts for all their extraordinary recommendations, and all their varying inconsistencies. Hence, every degree of restraint upon pelagic sealing is reluctantly conceded, and yielded only when it is compensated for, and more than compensated for, by an added restriction of the supply furnished to the market from the breeding islands. As the work of the pelagic sealers is on the one hand restricted in time or place, and thus discouraged, it is on the other stimulated by the certainty of a better market and a richer reward. So persistently and exclusively have they kept this policy before them as their main object, that an ideal has been formed in their minds which they openly avow, and to attain which is their constant effort. This ideal is that all taking of seals on land should be prohibited, and pelagic sealing be made the only lawful mode of capture.

They thus express themselves: "It has been pointed out, and we believe it to be probable, that if all killing of seals were prohibited on the breeding islands, and these were strictly protected and safe-guarded against encroachment of any kind, sealing at sea might be indefinitely continued without any notable diminution, in consequence of the self regulative tendency of this industry."

And suggesting, as the only objection to this policy which occurs to them, that it might be too much to expect of the United States to thus guard the islands and support a native population of 300 at its own expense, they continue: "It may be noted, however, that some such arrangement would offer, perhaps, the best and simplest solution of the present conflict of interests, for the citizens of the United States would still have equal rights with all others to take seals at sea, and in consequence of the proximity of their territory to the sealing grounds they would probably become the principal beneficiaries."

And they finally come to the conclusion that any taking of seals at the breeding places is an error for which there is no defense except long usage, and even that they regard as a doubtful apology. They say:

"While the circumstance that long usage may, in a measure, be considered as justifying the custom of killing fur seals on the breeding islands, many facts now known respecting the life history of the animal itself, with valid inferences drawn from the results of the disturbance of other animals upon their breeding places, as well as those made obvious by the new conditions which have arisen in consequence of the development of pelagic sealing, point to the conclusion that the breeding islands should, if possible, remain undisturbed and inviolate."

These references to the opinions expressed in the report of the commissioners of Great Britain, when taken together with the scheme recommended by them, leave no room for doubt that the defense of the Canadian sealers was from first to last, their predominating motive, and enable us to make for them the apology that they conceived that this was the duty with which they were especially charged. If this be the fact, it is easy to perceive how all their reasonings and recommendations should receive a color and character. We feel obliged to say that we can perceive no other ground upon which their action may be made consistent with good faith. (Argument of the United States, p. 209.)

* * * * * * *

The real conflict between the report of the British commissioners and the case of the United States seems to be as to the number of cows in a harem. The British commissioners assert that the number is unduly large of cows served by one bull; the United States produce credible and experienced witnesses to show that, on the contrary, the number of females is decreasing. A comparison is invited between the two statements and the quality of proof adduced in favor of each It is plain that the British commissioners could not admit the diminution in number of female seals without admitting that decrease to be wholly due to pelagic slaughter. They are therefore reduced to the necessity of insisting that there is a rodundancy of females and a deficit of males on the islands. They are kind enough to admit, however, that "the sparing of females in a degree prevented, for the time being, the actual depletion of seals on the islands" (section 58). It is not probable that any reasonable person will take issue with them on that point. The intelligence and legislation of the civilized world, not to speak of humanity in its broad sense, have concurred that to spare the female was not the best but the only effective method of preventing depletion and eventual extermination.

Even if we should concede, for the sake of the argument and in direct disregard of the fact, that the diminution is due to the smaller number of males, we would venture to remind this high tribunal, if such a reminder were needed, that the pirates or poachers who pursue and slaughter the pregnant and nursing females are killing, by starvation in the one case, by the mother's death in the other, a large number of males. Even, according to their own showing, the British commissioners

must realize that pelagic sealing is responsible, to some extent at least, for the decrease in the number of males, as well as of females. They may speak of this "industry," as they term it, and glorify it as requiring all the courage and skill which can be brought to bear on it (whatever that may mean). (Section 609.) They may contrast its "sportsmanlike" character with the "butchery" committed on the islands (section 610); but they can not fail to perceive that the mode of destruction, which principally deals with gravid females, necessarily strikes at the very foundation of life, and must eventually extinguish the race, because, as they mildly state it, it is unduly destructive (section 633).

The pelagic sealer not only kills or attempts to kill the males that he happens to meet, but prevents the birth of males to take their place. He often kills three with one discharge of his rifle, viz, the mother, the unborn young, and the pup at home; but he does it in a "sportsmanlike" manner, and he gives the sleeping animal a "fair sporting chance for its life." (Section 610.) In many cases he either misses his object or wounds it and loses it. So that there is by this manly process an utterly useless waste of life, in many cases a waste more or less appalling as the "sportsman" is more or less skillful. How destructive in reality this process is proven to be may be seen from the British commissioners' report under the head of "Proportion of seals lost" (p. 104, section 603). It must be a consolation to those disposed to extol this kind of sport that while nearly "all the pelagic sealers concur in the opinion that the fur seal is annually becoming more shy and wary at sea," it is certain that "the dexterity of the hunters has been increased pari passu with the wariness of the seals." (British commissioners' report, section 401.)

That the number of the seals has been diminished in recent years at a cumulative rate and that such diminution is the consequence of destruction by man is certified by the joint report of all the commissioners. That this human agency is pelagic sealing exclusively, and not the mode, manner, or extent of capture upon the breeding islands, is abundantly clear.

This follows necessarily from admitted facts. The fur seals being polygamous, and each male sufficient for from 30 to 50 females, and being able to secure to himself that number, it follows that there must be at all times a larger number of superfluous males, and the killing of them produces no permanent diminution of the number of the herd. On the other hand, the killing of a single breeding female necessarily reduces pro tanto the normal numbers.

An excessive killing of males might indeed tend toward a decrease if carried to such an extent as not to leave enough for the purpose of effectual impregnation of all the breeding females. The taking from these herds of 100,000 males would not, if that were the only draft allowed, be excessive. This is evident from many considerations.

(*a*) Those who, like the British commissioners, propose to allow pelagic sealing to such an extent as would involve the annual slaughter of at least 50,000 females in addition to a slaughter of 50,000 young males on the breeding islands can not certainly with the least consistency assert that the capture limited to 100,000 males would be excessive. Nor could they consistently assert this, even though the pelagic slaughter should be restricted (by some means which no one has yet suggested) to 10,000 females. It requires no argument to show that the destruction of even that number would be rapidly disastrous to the herds.

(*b*) And when we turn to the proofs, they are conclusive that prior to the practice upon any considerable scale of pelagic sealing the annual draft of 100,000 young males did not tend to a diminution of numbers.

(*c*) Of course, it is easily possible that the indiscriminate slaughter effected by pelagic sealing may soon so far reduce the birth rate as to make it difficult to obtain the annual draft of 100,000 young males. This draft, under such circumstances, would necessarily at once diminish the birth rate, for, the number of females being less, a less number of males would be required. The number of the whole herd might be rapidly diminished by the slaughter of females and the consequent diminution of the birth rate and still 100,000 males continue to be taken for a time without damage. How soon a point would be reached at which so large a draft of males from a constantly diminishing number of births would operate to produce an insufficiency of males is a problem which from want of precise knowledge of the relative numbers of the sexes it would be difficult to solve.

The British commissioners' report upon this subject is as follows:

"The systematic and persistent hunting and slaughter of the fur seal of the North Pacific, both on the shore and at sea, has naturally and inevitably given rise to certain changes in the habits and mode of life of that animal, which are of importance not only in themselves, but as indicating the effects of such pursuit and in showing in what particular this is injurious to seal life as a whole. Such changes doubtless began more than a century ago, and some of them may be traced in the historical precis elsewhere given (section 782 et seq.). It is unfortunately true, however, that the disturbance to the normal course of seal life has become even more serious

in recent years, and that there is therefore no lack of material from which to study its character and effect even at the present time."

In the zeal of their advocacy on behalf of pelagic sealing and their denunciation of the methods in use on the islands the commissioners have experienced much and evident difficulty in framing their theory. If they admitted, in unqualified terms, a decrease in number, the obvious deduction from the concession would be that the unlimited slaughter of females must bear the blame and burden of such a result. If, on the other hand, they should assert that the number actually increased, this would only be consistent with an approval of the methods in use on the land. Between this Scylla and this Charybdis a way of escape must be found, and it was found. The ingenuity here displayed deserves full notice and acknowledgment. The joint report contains this statement:

"We find that since the Alaska purchase a marked diminution in the number of seals on and habitually resorting to the Pribilof Islands has taken place, that it has been cumulative in effect, and that it is the result of excessive killing by man."

Bearing in mind that the fur seals forming the object of this controversy have no other home on land than the Pribilof Islands, and that the British commissioners themselves concede that they, for the most part, breed on those islands; bearing in mind, too, that these gentlemen have not yet discovered any other summer habitat for the seals, it would seem that this declaration is equivalent, in its fair sense and meaning, to a statement that the fur seals that frequent the American coast and the Bering Sea have suffered a marked decrease.

Perhaps it was so intended by the British, as it was by the United States commissioners; but if so, the former gentlemen have lost sight of their original intention and have been led to nice distinctions, which we shall now examine.

That the seal, although "essentially pelagic" (section 26), has not yet learned to breed at sea is not denied, although to the vision of the commissioners the prospect of such a transformation or evolution is evidently not very remote. We must, in justice to them, quote one single passage, which admirably illustrates the complacency and self-confidence with which they wrest to their own purposes with unhesitating violence the laws of nature and the mysteries of ulterior evolution. If this quotation does not give a just idea of the imaginative powers of these officials nothing but a perusal of the whole of their work will do them justice:

"The changes in the habits and mode of life of the seals naturally divide themselves into two classes, which may be considered separately. The first and most direct and palpable of these is that shown in the increased shyness and wariness of the animal, which, though always pelagic in its nature, has been forced by circumstances to shun the land more than before, so that but for the necessity imposed upon it of seeking the shore at the season of birth of the young it might probably ere this have become entirely pelagic."

An animal "always pelagic," forced by circumstances to shun the land more than before, and which would become entirely pelagic long before this if it were not obliged to seek the shore for so trifling an object as giving birth to its young, deserves to be classed among the curiosities of nature. The difference between animals (now) always pelagic and those (in the future) entirely pelagic may not readily be understood without explanation not vouchsafed. How can they be always pelagic if they are obliged to seek the land or perish, and why is it reasonable to talk of the probability of their becoming something different from what they are when that conjecture is based upon nothing but reckless and grotesque assumption? Of course, this and other specimens of affront to common sense are merely gratuitous and pointless vagaries. But the thesis must be sustained, viz, that the seals are not even amphibious animals; their resort to land is a merely accidental necessity, and therefore the United States can no more claim a right to or possession in them than in other "essentially pelagic animals," such as the whale, the codfish, or the turbot.

If anything more were needed to emphasize the absurdity of this defiance of well-known facts and settled distinctions in the animal world we might still further cite the British commissioners on the subject of the seal pelage or shedding of hair. It seems that these pelagic animals were not endowed by nature with the proper skin to perform this function in their native element. Unless they can find a suitable place out of water they retain the old hair and disregard the laws which would compel an annual shedding. Lest this seem an exaggeration, read their report citing Mr. Grebnitsky: "During the 'stagey' or shedding season their pelage becomes too thin to afford a suitable protection from the water." (See section 202; also 281, 631, 632.)

It is hardly necessary to say that this theory, so gravely and seriously advanced, that the seal is naturally and essentially a pelagic animal, is utterly unsustained by evidence, is refuted by the language of the commissioners themselves, and disputed by elementary writers. It is only necessary to ascertain how naturalists define pelagic animals and then compare such definition with the known characteristics and rudimentary elements of seal life (see especially for this the books of Johns Hopkins University). Besides, the unanimous and unquestioned testimony of the agents

for the Government and the lessees shows that the fur seals spend at least four months of the year on the Pribilof Islands.

Having found, with the American commissioners, a marked diminution in the number of seals on and habitually resorting to the Pribilof Islands, the British commissioners proceed to show that the seals are more numerous than ever. They have, no doubt, demonstrated this to their entire satisfaction on pages 72 and 73 of their report. Captain Warren they quote as saying that he noticed no diminution in the number of seals during the twenty years that he had been in that business, and, if any change at all, an increase (section 403). To the same effect Captain Leary, who says that in Bering Sea they were more numerous than he had ever seen them (section 403), while Mr. Milne, collector of customs at Victoria, reports, what others have said to him, that owners and masters do not entertain the slightest idea that the seals are scarce (section 403). What a tribute this must be to the management of the Pribilof Islands if, notwithstanding the conceded destruction of gravid and nursing females, these statements should be true. Capt. W. Cox took 1,000 seals in four days 100 miles to the westward of the Pribilof Islands (section 405). He found the seals much more plentiful in Bering Sea than he had ever seen them before. It would have added much to the interest of Captain Cox's statement if he had told us how many of these seals gave evidence of having left their pups at home.

The British commissioners multiply the evidence to show that the general experience as stated to them has been that seals were equally or more abundant at sea at the time of their extermination than they had been in former years. It is difficult to treat this with the respect that a report emanating from gentlemen of character and high official position should meet. Either the statement in the joint report is true and the assumption of an increase is untrue, or vice versa. In view of the evidence that these seals have no other home than the Pribilof Islands, it is plain, beyond the necessity of demonstration, that all the seals killed by Captain Cox and others in the Bering Sea were inhabitants of those islands, and the testimony only goes to show that the mothers do go out to sea a hundred miles or more, as is sworn to by the witnesses for the United States, and that it is while they are on the feeding grounds, or searching abroad for food, that they are captured by the Canadian poachers. If this is not so, then let the commissioners or those advocating their views tell us where these seals slaughtered by Captain Cox and others found their "summer habitat."

Any pretense that the seals are decreasing at home—i. e., where they live through the summer, and breed, and nurse, and shed their hair—and at the same time are increasing in the sea is simply an absurdity. It would have added much to the value of the testimony of all these masters if they had not sedulously avoided stating the sex of the animals that they killed.

There is one, and one explanation only, of this, and that explanation makes the stories above quoted plausible. The pelagic sealers were engaged in hunting nursing mothers on the feeding grounds, where those animals are found in large numbers. The decrease proved, and indeed admitted to exist (see joint report), had not yet been so great as to be manifest to those sealers who were so fortunate as to fall in with a number of females either intent upon finding the food necessary to produce a flow of milk or sleeping on the surface of the water after feeding.

And here we may note another illustration of the thesis and its advocacy. Having satisfied themselves that pelagic sealing rather operated to increase the supply of seals they remembered that the killing of young males was objectionable and likely to result in extermination, and thereupon discovered the fact that "a meeting of natives was held" at which the aborigines unanimously expressed the opinion that the seals had diminished and would continue to diminish from year to year (an opinion, too plain, we think, for argument), but they at once assign the reason, which is not the killing of many females, but the extraordinary fact that "all the male seals had been slaughtered without allowing any to come to maturity upon the breeding grounds." (Section 438.)

Having thus proved that the seals were in a flourishing condition of increase, and that they were decreasing in an alarming degree, the conclusion is reached that the decrease is on the land and the increase in the water:

"The general effect of these changes in the habits of the seals is to minimize the number to be seen at any one time on the breeding islands, while the average number to be found at sea, at least proportionately, though perhaps in face of a general decrease in the number of seals, not absolutely increased." (Section 445 of British Commissioners' Report.)

Would it be irrelevant to inquire what was the "summer habitat" of the numerous seals slaughtered by Captain Warren, Captain Leary, and Captain Cox? Were they not all of the Pribilof family? Did not the commissioners, who quoted Captain Cox to the effect that he had, no doubt in true sportsmanlike fashion, with a shotgun, killed 250 seals a day for four days, know that the enormous majority of these were nursing mothers whose pups were starving at home? (Argument of the United States, p. 288.)

PELAGIC SEALING, CLOSE SEASON, ETC.

That many honest and patriotic men have differed in their opinions about the true cause of the destruction and threatened total extinction of the Alaskan fur seal is not to be denied; for, unfortunately, the rival interests have been so many and so diverse, and the seal islands are so far beyond the reach and ken of the public, that it has been very difficult to get at the plain truth of the matter as it really exists. Above all the theories advanced, however, there are two facts which are most intimately connected with the discussion, which never should be lost sight of if we would understand the matter thoroughly.

First. That from 1835, when the Russians first prohibited the further killing of the female seals, to 1884, when the pelagic sealers became numerous and powerful, the seal herds grew and flourished and the rookeries expanded notwithstanding long drives and other barbarous methods continued until the United States purchased Alaska; and that from 1868 to 1886 an average annual killing of 100,000 young males was made before a sign of decrease or diminution appeared on the islands.

Second. In spite of all that has been said and reiterated against the lessees' management of the islands and the methods pursued for so many years in caring for the rookeries and the seals, in driving and killing, and the waste of seal life resulting therefrom, it must be admitted that under this same management (which has been the same, practically for twenty-five years), the seals increased steadily from 1868 to 1884, or until the pelagic sealers appeared in force in Bering Sea.

These are facts that have been proved beyond the possibility of a doubt, and although interested or meddlesome parties may and often do make wild charges and unreliable statements about bad management, bad methods, and barbarity in the driving and killing of the seals, there is not a shadow of truth in the stories, nor has any honest man who ever lived on the seal islands ever said or thought of anything of the sort.

The word "monopoly" is often used for the purpose of bringing odium on the seal question when facts are lacking, but the truth is that, despite all the wicked and idle insinuations thrown out in that way, the leasing of the seal islands to a responsible company was the best as well as the most prudent thing the Government could have done under the circumstances, as the result showed before the pelagic sealer appeared to interfere with the prosperity of the rookeries which had been fostered and built up by the wise management of the lessees.

As an answer to the fault-finder who proclaims the destruction of the seals through the mismanagement of a monopoly, I will quote from the island records the number of seals actually killed for their skins on the islands during the twenty years' lease of the Alaska Commercial Company, and also the number of skins which were rejected or lost out of all that were killed.

[Senate Ex. Doc. No. 107, Fifty-second Congress, second session, appendix.]

Total number of seals killed for their skins by the lessees from 1870 to 1889, both inclusive.

St. Paul	1,463,907
St. George	318,120
Total	1,782,027

Total number of skins rejected from same.

St. Paul	2,480
St. George	628
Total	3,108

In other words, for every 1,000 seals killed by the lessees, during their twenty years' lease, there was a loss of 1¾ skins.

As these figures were compiled by me, originally, from the books kept on both of the seal islands, I know they can not be denied or successfully contradicted, and I respectfully submit them, and the lesson they teach, to the most careful consideration of the Department.

Lest some critic may say I have not quoted all the figures, let me add right here that I am speaking of the large young males which were actually killed for their skins to make up the lessees, annual quota, and of those only.

That the natives killed, for food, 99,684 young male seals during the same twenty years (in addition to pups), and that 27,690 of the skins were rejected, is true; but the lessees are not blamable for that, for they had nothing whatever to do with it, and consequently I have counted only the skins of the seals killed during the regular sealing season and before the seals became "stagy."

Most of the seals killed for natives' food were taken during the "stagy" season, hence the rejection of so many of the skins.

This is why I have repeatedly advised in this and former reports that no killing for any purpose should be permitted during the "stagy" season.

The management of the seal islands, and the care bestowed on the seals by the lessees and their agents, are matters of history into which it is not necessary to enter, because the above figures show far more eloquently and conclusively than words of mine could that that must of necessity be a well-managed business which can make such a showing at the end of twenty years.

Only 7 rejected skins out of every 4,000 seals killed is a record for good and careful management that the lessees may very well be proud of, and it is a withering reply to all the idle story-tellers who have attempted from time to time to make the world believe that carelessness and brutality united in driving the seals hurriedly to the killing grounds, leaving hundreds dead on the road, and that bad management, corruption, and dishonesty reigned supreme on the seal islands.

In another part of this report I have given a table showing the number of seal skins actually recorded as sold as a result of pelagic sealing from 1868 to 1894, both inclusive, which shows the gradual increase of the catch from year to year as the sealing fleet increased in numbers and efficiency, until the 4,367 skins taken in 1868 have grown into 121,143 in 1894.

To further illustrate the growth of pelagic sealing and the havoc it has wrought on the seal herd I will now insert another table comparing the numbers taken on the Pribilof Islands with those taken on the open sea from 1890 to 1894, both inclusive.

Year.	Official, Pribilof Islands.	Official, pelagic catch, as entered in United States and Victoria (British Columbia) custom-houses.	As corrected by trade sales, adding skins shipped via Suez Canal.
1890	20,995	51,814	*a* 60.000
1891	13,482	69,788	*a* 75.000
1892	7,549	73,394	*a* 85.000
1893	7,500	78,083	109,669
1894	16,031	121,143	142,000
Total	65,557	394,222	471,669

a Estimated.

Those taken on the islands, it is hardly necessary to say, were young males—the surplus males of the herd, those taken at sea were taken indiscriminately, without regard to sex, and were mostly gravid females or nursing mothers whose young perished too.

The official figures for the Pribilof Islands catch are taken from the Treasury agents' annual reports on file in the Department. The official figures of the pelagic catch are based on the reports of the collectors of customs at San Francisco, Astoria, Port Townsend, and other ports in the United States, and at Victoria, British Columbia, and, for some of the years, from the London trade sales of pelagic skins.

There is every reason to believe that the real number of pelagic skins taken during the five years last named aggregate 500,000, and if we consider the loss sustained by the wounding and sinking of seals that are never secured, the numbers would run up to three-quarters of a million destroyed, lost to the United States, in five years.

But let us take only what are given officially as entered in United States and Victoria (British Columbia) custom-houses, 394,222, and allow that only 50 per cent of them were females, or, say, 200,000 mothers, one-half of whose pups were "cut out alive" and thrown overboard at sea, and the other half of whose pups starved to death on the rookeries, then the account would run thus:

Male seals killed	194,222
Gravid females	100,000
Pups "cut out of same"	100,000
Mothers in milk	100,000
Pups starved on rookeries	100,000
Total	594,222

But coming back once more to the bare official figures as given by the collectors of customs, what do they teach us?

They show on their face that the pelagic sealers are reaping the wealth of the seal herd while the United States are paying all the expenses; that during the existence of the modus vivendi, when it was agreed that all parties should cease killing seals until an impartial inquiry and investigation could be made, the United States lived up to the agreement, and the pelagic sealer increased his fleet and killed more seals than he ever killed before.

In 1890, on the discovery of the decrease on the rookeries, we immediately reduced our catch from the regular annual quota of 100,000 to 20,995, but the pelagic sealer continued on his cruise and captured in the whole North Pacific Ocean and Bering Sea 51,814 skins.

In 1891 our catch amounted to 13,482; the pelagic sealer, in spite of pledge, promise, law, and two armed fleets, captured nearly 70,000.

In 1892, with the modus vivendi thoroughly understood by our agents on the islands, we took 7,549 seals to feed the natives of the seal islands as per agreement with Great Britain, and the pelagic sealer, in defiance of all law, took 73,394.

In 1893, still abiding by the terms of the modus vivendi, we took 7,500, and the pelagic sealer took 109,000. (These figures include seals killed on the Asiatic side of the North Pacific Ocean.)

It was in 1893 the Tribunal of Arbitration met at Paris, and, after carefully reviewing the whole situation and the questions at issue, a decision was rendered and regulations suggested for the settlement of the Bering Sea question and for the protection of the fur seals.

The full text of the award will be found in the Appendix.

With the Tribunal of Arbitration, and the questions of national and

international law decided by it, I have nothing to do; but with all that appertains to the practical side of the seal question and the measures which should be adopted for the absolute protection of the seals, I have to do, and I say, without the least hesitation, that the regulations adopted for that express purpose by the Tribunal of Arbitration are a failure.

That the two great nations directly interested in the questions laid before the tribunal were honestly anxious to have a definite and mutually satisfactory settlement is not to be doubted; that the questions at issue were fully and ably presented by counsel on both sides can not be disputed; that our own representatives were in full possession of all the facts and testimony, and that they had a thorough knowledge and grasp of the actual situation is shown by the able manner in which they presented their case and met the arguments of opposing counsel, and yet notwithstanding all this, regulations have been made professedly for the protection of the seals but practically for the benefit of the pelagic sealer.

No better proof of this could be given than the official figures already quoted for 1894—a total pelagic catch in the North Pacific Ocean and Bering Sea, from shore to shore, of 142,000 seals, while only 16,031 were killed on the Pribilof Islands from August, 1893, to August, 1894.

Let it be remembered, too, that out of a total of 95 vessels employed in pelagic sealing only 37 entered Bering Sea in 1894, and yet, in about five weeks, these 37 vessels killed over 7,000 seals more than were taken by the 95 vessels on the American side of the North Pacific Ocean, exclusive of Bering Sea, in four months, from January to April, inclusive.

That the regulations have already accomplished much good in the Pacific Ocean outside of Bering Sea is freely admitted; but so long as they allow the same seals to be killed in August in Bering Sea which they protected in May, June, and July in the Pacific Ocean they can not be of permanent benefit to the herd as a whole. The fault is not the fault of the Tribunal of Arbitration nor of any of the American gentlemen in any way connected with it, for they very clearly showed that extermination would be the result of pelagic sealing in Bering Sea at any time from May to September, as the following extracts from argument of American counsel will show:

PELAGIC SEALING.

The British commissioners, in their report (section 132), say the coast catch is made from February to June, inclusive, five months, while the Bering Sea catch is taken during July, August, and part of September, or two months and a half.

For each of the 96 vessels engaged in the coast sealing, the average per month is 113, while the monthly average for each of the 86 vessels entering Bering Sea is 290.

It is at once apparent that sealing in Bering Sea is over twice as damaging to the seal herd as sealing in the North Pacific, and that in three years 8,000 more seals were taken in Bering Sea than along the coast in half the time by a fleet numbering ten vessels less than the coast fleet.

Certain witnesses examined by the United States give sufficient data to show the time occupied in sealing along the coast and that occupied in Bering Sea, also the catches made in each place, respectively, and in many instances the distance from the islands at which seals were taken. These have all been collated and arranged in the form of a table, an examination of which will show that they fully corroborate the statement that pelagic sealing is much more damaging in Bering Sea than in the North Pacific. The first four witnesses were examined at Victoria. The page references are to the United States case, Appendix, Vol. II.

Such data as these appearing in the above table can not be found in the depositions appearing in the British counter case. It is unfortunate that this important matter should have been left out of the British testimony.

This testimony further corroborates the statement of the British commissioners that the Bering Sea is not entered until about the 1st of July.

Of the pelagic sealers examined by the United States (United States case, Appendix, Vol. II, pp. 313–507, inclusive) 79 give testimony as to the time they entered Bering Sea. Of this number 68 entered the sea after June 20 and 61 entered between July 1 and July 15.

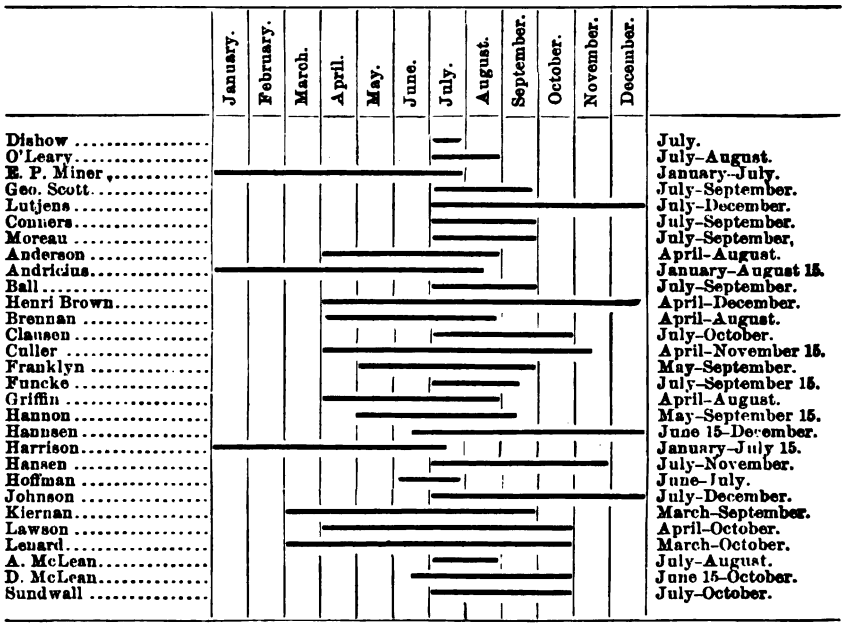
Of the 316 depositions taken by Great Britain and printed in the British counter case (Appendix, Vol. II) but 5 give the time of entering Bering Sea. One of these (Miner, p. 113) gives the time as "the latter part of June;" 2 (Hartiven, p. 112, and Figuera, p. 125) "early in July;" and the 2 others (Gaudin, p. 111, and Lutjens, p. 121), "July 20."

From the testimony stated above, it is evident why Great Britain failed to examine witnesses on this point, since the British commissioners proposed as a restrictive regulation that Bering Sea should not be entered before the 1st of July, and the British counsel, in presenting a scheme for regulations to the tribunal, incorporated the same suggestion therein. It scarcely seems possible, in face of the evidence that sealing does not usually begin in Bering Sea until July, that Great Britain's advisers can really believe that it would restrict pelagic sealing to prohibit the sealers from doing what they have never done, do not do, and never would do.

Of the sealers examined by the United States and Great Britain, 29 suggest a definite period for a close time. They are arranged below in the form of a table, showing the months in which they think pelagic sealing should be prohibited. The first 7 were examined by Great Britain, and their depositions are included in the British counter case. (Appendix, Vol. II.) The remainder were examined by the United States, and their statements appear in the United States case. (Appendix, Vol. II).

These men, being pelagic sealers, know what months sealing is injurious to the seal herd. If, therefore, the advice of all these witnesses were followed, every month in the year would be closed to pelagic sealing.

Tabulation of opinions of pelagic sealers, showing during what months protection is needed in Bering Sea.



An examination of the foregoing table shows that as to some months all are substantially agreed that sealing should be prohibited if the seals are to be preserved. These months are July and August, the principal sealing months in Bering Sea.

All the 29 include July, except one, who thinks the close season should end on July 15.

Twenty-four, or four-fifths of the witnesses, include August, and 17 include September in their proposed close season.

On the facts above stated the United States claim that the following propositions have been demonstrated beyond refutation:

(1) That female seals 2 years old and over are pregnant at all times when found in the waters of Bering Sea.

(2) That the nursing females are the only class of seals which feed to any extent while pelagic sealing is carried on in Bering Sea.

(3) That the nursing females are taken in large numbers over 50 miles from the islands.

(4) That the seal pups are not weaned until after the sealing season has closed in Bering Sea.

(5) That the killing of a nursing female in Bering Sea destroys at least two lives, namely, the female and the fetus; and it is an irresistible conclusion that the pup left upon the islands by the female killed also perishes (see paper directed particularly to that subject).

(6) That in point of numbers alone sealing in Bering Sea is over twice as destructive to seal life as sealing in the North Pacific.

(7) That the sealing season in Bering Sea comprises only the months of July, August, and a part of September.

(8) That all the sealers examined by the United States and Great Britain as to the months when sealing should be prohibited include July in the close season proposed, and nearly all include August.

(9) That to open Bering Sea during the months of July and August, with a protective zone of 20 miles about the Pribilof Islands, as proposed by Great Britain, would mean the extermination of the seal herd.

(10) That absolute prohibition of pelagic sealing at all times in the whole Bering Sea east of the 180 degrees meridian from Greenwich is necessary to preserve the Alaskan seals. (Notes for United States counsel, p. 10.)

REGULATIONS.

[Extract from Senator Morgan's opinion.]

I will now state, as I gather from all the evidence before us, what is the evil that these Governments have found to be so threatening to seal life in the Alaskan herd as to draw them into an agreement that it should be repressed by their concurrent action.

I will not attempt to examine again the details of the evidence so thoroughly presented and with such judicial impartiality by Mr. Justice Harlan. I can find no flaw or omission in his careful statements of the evidence, or in the conclusions that he drew from it as to matters of fact. I believe that he stated the exact truth of the situation, and I fully concur in his treatment of the subject and in the conclusions that he has reached.

The present situation, as I understand it, is as follows, as shown by a comparison of the Pribilof and pelagic catches:[1]

Year.	Pribilof Islands.	Total pelagic catch.
1890	21,234	51,655
1891	12,071	68,000
1892	7,500	73,394
1893	7,500	a80,000
Total	48,305	273,049

a Estimated.

In 1889 the Pribilof catch was 102,617, which fell off to 21,234 in 1890, and this was all that the islands would yield of killable seals, leaving a deficit as compared with the previous year of 81,379 seals upon the islands. If this contrast in the number of seals that could be taken on the islands in 1889 and 1890 was due to the overkilling of males on the islands and not to pelagic sealing, the falling off of numbers would have been indicated in each of the six years prior to 1889. No one has asserted such a fact, and we know that a male seal must be of 6 years old before he is able to take up and maintain a harem on the rookeries. So that this falling off between 1889 and 1890, if it was due to an excessive killing of males, must have occurred at least as early as 1882. This is not true, and no one pretends that it is. The killing of 51,655 seals that the pelagic hunters got, and at least three-fold that number, including

[1] These figures, cited by Senator Morgan, include seals taken off the Asiatic coast of the North Pacific Ocean.

those that were lost, must have reached 300,000 seals that were destroyed. Of this number three-fourths were females, that are not killable seals on the islands and are not counted in the Pribilof catch.

The verification of this calculation is almost perfect in 1892, when the pelagic sealers took 73,000 seals, and in 1891, when they took 68,000. The close approximation of these figures shows that the loss of the seals on the islands was due to pelagic sealing and not to the want of virility in the bulls on the breeding grounds or to any other cause.

That the process which has actually depleted the seal herd in four years to the extent of 569,065 (273,000 of which were females) is an evil that requires to be remedied, for the sake of the protection and preservation of seal life, no one can doubt, as it seems to me. This progressive depletion of this herd of seals can not fail to destroy them very soon, and, in the meantime, to deprive the United States of all possible advantage and compensation derived from its efforts to save the species. What the United States has done, or omitted to do, to deserve treatment at the hands of this tribunal that will expose its lawful industries to ruin, its revenues to depletion, and its wards on the Privilof Islands to the loss of their only valuable industry will be an inquiry that will seriously challenge the justice of such an award, in the estimate of the civilized world.

The evil to be provided against by this tribunal is, clearly, pelagic sealing with firearms.

If there is, or has been, any detriment to the seal herd from the treatment of the United States, on the islands, the facts on this subject were not unknown to Great Britain when the treaty was made and before ratifications were exchanged. This subject was not referred to in any of the correspondence between the Governments, and the treaty is silent as to this supposed mismanagement.

Will the tribunal, in such a case, make an objection to protecting and preserving the fur seals on the water because Great Britain has not thought it proper or necessary to call the methods into question, or the United States into account for its manner of dealing with that subject on land? True, if it can be shown that the depletion of the herd is due to that cause, and not to pelagic hunting, that is a just and proper inquiry. If it is due to both causes, this tribunal will deal with the pelagic evil, that is submitted to its consideration, and leave it to the nations concerned in the protection of seal life to deal with the evil on land.

If the United States are not so wise in caring for the seals on land as the pelagic hunters are in caring for them at sea, as seems to be asserted, they are quite as earnest in the wish to do so. They destroy no female seals, while the pelagic hunter never spares one. They do not fire upon the breeding rookeries when the seals are massed, many of them asleep, with double-barreled shotguns and buckshot cartridges. They do not kill indiscriminately all seals that come in sight.

The United States permit no female seals to be killed; while 75 per cent of those killed by the pelagic hunter are females heavy with young and almost helpless.

In that condition, as well as in accordance with a law of their nature, which is an important fact in connection with their domesticity, the female fur seals require a great deal of sleep. When asleep, they turn upon their backs, fold their flippers over their breasts, and curving their hind flippers upward, they form their bodies as a sort of boat, the spinal column representing the keel. They can only breathe the upper air; they can not, like a fish, extract air from the water. After inhaling the air the nostrils close firmly together, and the air, heated by their bodies, expands and buoys them up. They seldom breathe oftener than once in fifteen minutes, and, when diving, they need not return to the surface for air oftener than every thirty minutes. We know nothing of their habits at night while in the ocean. On land they are so boisterous at night with their howlings that sleep would seem to be impossible, except from sheer exhaustion. They have not a keen vision, and the sunlight is painful to them, so that they leave the land and go to sea on days that are bright. This causes them to seek a summer home in a place where fogs and rains prevail. Yet they must have warmth. Nature has amply provided for this necessity by giving them a double coating of thick, strong hair, and of the thickest and finest fur that was ever bestowed upon any species of animals. It is as impervious to water as the down of an eider duck. The pups are born without this fur, and hence their aversion to swimming until it has grown out; and this detains them on land for four months, at least, during which period they can subsist only on the milk of the cow seals. While their vision is not keen, their auditory organs and sense of smell are exceedingly acute. They are attracted by sounds as few other animals are. In this faculty they make a close approach to the endowments of mankind. Sir John Thompson is amused at an account, read by Mr. Justice Harlan, of the seals being attracted in great numbers near to the shore at Hoy by the ringing of a church bell. In his credulous sport over this incident Sir John forgot that it is the personal observation of Mr. Low, one of the greatest naturalists who ever lived, the friend and companion of Cuvier, and is more than confirmed by M. Peron, whom France has honored in the most conspicuous way. His abilities as a naturalist,

acquainted intimately with seal life, are as far in advance of those of Professor Elliott, from whom Lord Hannen quotes with much satisfaction, as Napoleon was in advance of the Sioux chieftain, Sitting Bull, as a military genius.

I will presently quote something further about fur seals from Mr. Peron.

I know Mr. Elliott, whom the British Government has dubbed "professor." I have respect for his character and sprightliness. He is a painter in water colors of no mean pretensions, but his use of color does not stop with his canvas. It enters into all he says, and makes him too vivid an enthusiast for a safe reliance on questions of measurements, statistics, and cold facts. Mr. Elliott was out on the Pribilof Islands on the 10th of July, 1890, taking field notes, which, to be of any value, should be free from all romantic conjecture. The following is one of his highly colored extracts from his report of that day:

"In company with Mr. Goff and Dr. Lutz I made my plotting of the breeding seals as they lay on the Reef and Garbotch to-day. Here at the very height of the breeding season, when the masses were most compact and uniform in their distribution in 1872–1874, I find the animals as they lay to-day, scattered over twice and thrice as much ground, as a rule, as the same number would occupy in 1872—scattered because the virile bulls are so few in number and the service which they render so delayed or impotent. In other words, the cows are restless; not being served when in heat, they seek other bulls by hauling out in green jagged points of massing (as is shown by the chart) up from their landing belts. This unnatural action of the cows, or rather unwonted movement, has caused the pups already to form small pods everywhere, even where the cows are most abundant, which shadows to me the truth of the fact that in five days or a week from date the scattering completely of the rookery organization will be thoroughly done. It did not take place until the 20th to the 25th of July, 1872. In 1872 these cows were promptly met with the service which they craved on the rookery ground. The scattering of these old bulls to-day over so large an area is due to extreme feebleness and combined in many cases to a recollection of no distant day when they had previously hauled thus far out on this very ground surrounded by bareness, though all is vacant and semi-grass grown under and around them now." (Dissenting opinions, Harlan and Morgan, pp. 106, 109.)

It is assumed throughout the report of the British commissioners that pelagic sealing is not necessarily destructive, and that, under regulation, the prosecution of it need not involve the extermination of the herds. This assumption and the evidence bearing upon it will be elsewhere particularly treated in what we may have to say upon the subject of regulations. It will there be shown that it is not only destructive in its tendency, but that, if permitted, it will complete the work of piratical extermination in a very short period of time. But so far as it is asserted that a restricted and regulated pelagic sealing is consistent with the moral laws of nature and should be allowed, the argument has a bearing upon the claim of the United States of a property interest, and should be briefly considered here. Let it be clearly understood, then, just what pelagic sealing is, however restricted or regulated. And we shall now describe it by those features of it which are not disputed or disputable.

We pass by the shocking cruelty and inhumanity, with its sickening details of bleating and crying offspring falling upon the decks from the bellies of mothers as they are ripped open, and of white milk flowing in streams mingled with blood. These enormities which, if attempted within the territory of a civilized State, would speedily be made the subjects of criminal punishment, are not relevant, or are less relevant, in the discussion of the mere question of property.

It is not contended that in pelagic sealing (1) there can be any selective killing, or (2) that a great excess of females over males is not slain, or (3) that a great number of victims perish from wounds without being recovered, or (4) that in most cases the females killed are not either heavy with young or nursing mothers, or (5) that each and every of these incidents can not be avoided by the selective killing which is practiced on the breeding islands. We do not stop to discuss the idle questions whether this form of slaughter will actually exterminate the herds or how long it may take to complete the destruction. It is enough for the present purpose to say that it is simple destruction. It is destructive because it does not make or aim to make its draft upon the increase, which consists of the superfluous males, but, by taking females, strikes directly at the stock, and strikes at the stock in the most damaging way, by destroying unborn and newly born pups, together with their mothers. Whoever undertakes to set up a moral right to prosecute this mode of slaughter on the ground that it will not necessarily result in complete destruction must maintain that while it may be against the law of nature to work complete destruction, it is yet lawful to destroy. But what the law of nature forbids is any destruction at all unless it is necessary. To destroy a little and to destroy much are the same crimes.

If there were even something less than a right, or rather some low degree of right—for nothing other than rights can be taken notice of here—some mere convenience, it might be worthy of consideration; but there is none. It can not even be said that pelagic sealing may furnish to the world a seal skin at a lower price. Nothing can

be plainer than that it is the most expensive mode of capturing seals. It requires the expenditure of a vast sum in vessels, boats, appliances, and human labor, which is all unnecessary, because the entire increase can be reaped without them. This unnecessary expense is a charge upon the consumer, and must be reimbursed in the price he pays. In no way can pelagic sealing result in a cheapening of the product, except upon the assumption that the stock of seals is inexhaustible and that the amount of the pelagic catch is an addition to the total catch, which might be made on the land if capture were restricted to the land; and this assumption is admitted on all hands, and even by the commissioners of Great Britain, to be untrue.

If there were any evil, or inconvenience even, to be apprehended from a confinement of the capture of the seals to the breeding places, it might serve to arrest attention; but there is none. Much is said, indeed, in the report of the commissioners of Great Britain concerning a supposed monopoly which would thus be secured, as is pretended, to the lessees of the breeding islands, which would enable them to exact an excessive price for skins; but this notion is wholly erroneous. (Argument of the United States counsel, p. 98.)

The whole herd owes its existence not merely to the care and protection but to the forbearance of the United States Government within its exclusive jurisdiction. While the seals are upon the United States territory during the season of reproduction and nurture that Government might easily destroy the herd by killing them all, at a considerable immediate profit. From such a slaughter it is bound to refrain, if the only object is to preserve the animals long enough to enable them to be exterminated by foreigners at sea. If that is to be the result, it would be for the interest of the Government, and plainly within its right and powers, to avail itself at once of such present value as its property possesses, if the future product of it can not be preserved. Can there be more conclusive proof than this of such lawful possession and control as constitutes property, and alone produces and continues the existence of the subject of it?

The justice and propriety of these propositions, their necessity to the general interests of mankind, and the foundation upon which they rest in the original principles from which rights of ownership are derived, have been clearly and forcibly pointed out by Mr. Carter. (Argument of the United States counsel, p. 134.)

Thus it will be seen that the danger menacing the seals in Bering Sea by hunting in July, August, and September was well understood by American counsel at Paris, and pointed out by them to the arbitrators with rare ability and conciseness.

As I write, the Congressional Record of December 12 is on my desk with a letter from Mr. Elliott in which he speaks very disparagingly of our agents and counsel at Paris, and of their lack of knowledge of the subject-matter before the Tribunal of Arbitration, thus:

At the time these articles of the Paris award were published immense stress was laid upon the fact that firearms were prohibited in Bering Sea by our agents, who declare that this prohibition would discourage and break up the business of the pelagic sealer. They were strangely ignorant of the truth in the matter, at least the lawyers were, and they had nobody on our side with them at Paris who really knew anything about the life and habits of the seals, who could teach them better.

That they were neither infallible nor omnipotent is freely admitted; that they may have made some mistakes may be true; but that they left behind them in America an equal number of men knowing one-half as much as what they knew about seals has not been, nor can it be, shown.

If mistakes have been made at all they were made when we first agreed to arbitrate the questions that have since been decided against us by the Tribunal of Arbitration; and it is now too late to enter into idle discussions, criminations, and recriminations as to who was right and who was wrong.

Having once put our case into the hands of the tribunal, we must abide by its decision until we can with honor and dignity, worthy our country, bring about other arrangements.

That the regulations, made in good faith, do not accomplish all that was expected of them is so patent to everyone that it needs no discussion here, and the proper steps ought to be taken as soon as possible *to remedy their defects.*

Of one thing we may rest assured, and that is that August and Sep-

tember—but August by all means—should have been included in the "close time," if the seals are to be saved from extinction.

It is in August the harems, or families, are broken up on the rookeries, and the mother seals go away from the islands to distances of from 80 to 200 miles after food and rest; and it is in August they sleep soundest and longest, after gorging themselves with the first full meal they have had time to secure since June. In August and September the weather is usually favorable in Bering Sea, and the pelagic hunter, having a license to work and nothing to fear, goes in among the sleeping mother seals and quietly spears them until his vessel is loaded with skins, and want of room for more admonishes him to stop.

That the seals have steadily decreased since 1884; that much of the decrease is due to the slaughter of the females by pelagic hunters; that the rookeries are in about the same depleted condition that they were in 1834, after a long period of female slaughter by the Russians; that the remedy applied then must be applied now if we would save the fur seals from total extinction, and build up and replenish the rookeries, are self-evident propositions and cannot be denied.

There is no time to debate mere questions of detail, and we are all agreed, I think, that on the absolute safety and continued protection of the female seal depends the perpetuation of the species. So well has this been understood and appreciated since 1835 that no female seal has been, knowingly, killed on the seal islands in Bering Sea for the past sixty years.

It makes but little difference now as to whose theory was the correct one when guessing was in order; nor does it matter much as to whether spears or shotguns are used in killing mother seals, or whether they are killed in the North Pacific Ocean or in Bering Sea; the only question worth considering in this matter of fur seals just now is "How can we prevent the killing of females?"

Fortunately the declarations made by the Tribunal of Arbitration suggest the most practicable way of solving the problem; and, with the consent of Great Britain, we can solve it immediately.

The Tribunal of Arbitration has declared that:

> In view of the critical condition to which it appears certain that the race of fur seals is now reduced in consequence of circumstances not fully known, the arbitrators think fit to recommend both Governments to come to an understanding in order to prohibit any killing of fur seals, either on land or at sea, for a period of two or three years, or at least one year, subject to such exceptions as the two Governments might think proper to admit of.
>
> Such a measure might be recurred to at occasional intervals if found beneficial.

In the spirit of that declaration, and being only too well aware of the present "critical condition of the race of fur seals," and fully appreciating the importance of immediate action, if they are to be saved from extinction, I respectfully offer the following suggestions:

(1) That the United States Government shall officially notify Great Britain of the failure of the "regulations" to adequately protect the seals from the destructive work of the pelagic sealer.

(2) That Great Britain shall be requested to join with the United States in establishing a modus vivendi until, jointly, they arrange to have the cooperation of both Russia and Japan in making regulations for the proper protection of the seal herds coming to the islands or territory of each.

(3) That during the time set apart for the modus vivendi no sealing vessels shall be cleared for sealing purposes, nor shall seals be taken anywhere in the North Pacific Ocean or in Bering Sea, excepting what may be *taken by the Indians on the* American and British Columbian

coasts for food, and by the natives of the Pribilof Islands for necessary food, fuel, and clothing, as was done during the last modus vivendi.

(4) That Congress shall be asked for an appropriation to defray the expenses of a commission of at least three competent and disinterested men, whose duty it shall be to visit all the seal islands and breeding rookeries in the Bering and Okhotsk seas, and any others whose seals range in either of those seas or in the North Pacific Ocean; to make a thorough investigation of fur-seal life, and to collect testimony bearing on the habits of the animal on land and at sea, and all data that it is possible to secure regarding the effect of driving and killing on land, and of pelagic sealing, and such other information as may be deemed necessary to a thorough understanding of the seal problem.

(5) That the said commission shall be appointed by the President of the United States, and that Great Britain, Russia, and Japan be invited to appoint similar bodies for similar purposes, who, at the completion of their joint investigations, shall jointly report the result thereof and suggest regulations for the proper and adequate protection of the fur seals on land and water.

In making these suggestions I have kept in view the fact that without concurrent action, which shall be mutually satisfactory to the nations directly interested, there can be no adequate protection given to the seals; for so long as pelagic sealers can operate freely in Japanese or Russian waters during a "close time" on the American side, and vice versa, the herds will eventually be exterminated.

The question has been asked, "Suppose Great Britain will not consent to a modus vivendi or a change in the regulations before the expiration of the five years' term established by the Tribunal of Arbitration; what then?"

It must be borne in mind that the regulations do not extend to the seal islands, nor have they anything whatever to do with our work thereon.

Let Congress at the present session repeal all laws which limit the numbers or designate the sex to be killed on the islands, and enact laws empowering the Secretary of the Treasury to kill without limit whenever it may appear that adequate protection to the herds has been sought for in vain. That this last resort is our right and our duty was plainly shown by the United States counsel at Paris, who said:

> The whole herd owes its existence not merely to the care and protection, but to the forbearance of the United States Government within its exclusive jurisdiction. While the seals are upon the United States territory during the season of reproduction and nurture, that Government might easily destroy the herd by killing them all at a considerable immediate profit. From such a slaughter it is not bound to refrain if the only object is to preserve the animals long enough to enable them to be exterminated by foreigners at sea. If that is to be the result, it would be for the interest of the Government, and plainly within its right and powers, to avail itself at once of such present value as its property possesses if the future product of it can not be preserved. (Argument of the United States counsel, p. 134.)

And yet, while admitting our right, and asking for the enactment of a law conferring the authority to kill every seal on the Pribilof Islands, should the necessity arise to demand it, I abhor the thought of the possibility of such a dreadful contingency.

While it is well to be fully prepared, let us use all honorable means to avert it if possible.

Respectfully submitted.

JOSEPH MURRAY, *Special Agent.*

Hon. JOHN G. CARLISLE,
Secretary of the Treasury.

APPENDIX.

PELAGIC SEALING.

Deposition of Milton Barnes, special employee of United States Treasury on St. Paul Island.

TERRITORY OF ALASKA,
St. Paul Island, ss:

I, Milton Barnes, being duly sworn according to law, depose and say as follows: I am a citizen of the United States, and when at home reside near Columbus, Ohio. Have been temporarily stationed during the last year on the island of St. Paul, one of the fur-seal or Pribilof group in Bering Sea, as a special employee of the United States Treasury Department on said island.

One day during the latter part of August or fore part of September last (exact date forgotten), Col. Joseph Murray, one of the Treasury agents, and myself, in company with the British commissioners, Sir George Baden Powell and Dr. Dawson, by boat visited one of the seal rookeries of that island known as Tolstoi or English Bay. On arriving there our attention was at once attracted by the excessive number of dead pups, whose carcasses lay scattered profusely over the breeding ground or sand beach bordering the rookery proper and extending into the border of the rookery itself. The strange sight occasioned much surmise at the time as to the probable cause of it. Some of the carcasses were in an advanced stage of decay, while others were of recent death, and their general appearance was that of having died of starvation. There were a few that still showed signs of life, bleating weakly and piteously, and gave every evidence of being in a starved condition, with no mother seals near or showing them any attention.

Dr. Dawson while on the ground took some views of the rookery with his kodak, but whether the views he took included the dead pups I could not say. Some days after this—can not state exact date—I drove with Mr. Fowler, an employee of the lessees, to what is known as Halfway Point, or Polavina rookery. Here the scene was repeated, but on a more extensive scale in point of numbers. The little carcasses were strewn so thickly over the sand as to make it difficult to walk over the ground without stepping on them. This condition of the rookeries in this regard was for some time a topic of conversation in the village by all parties, including the more intelligent ones among the natives, some of whom were with Mr. J. Stanley Brown in his work of surveying the island, and brought in reports from time to time of similar conditions at substantially all the rookeries around the island. It could not, of course, be well estimated as to the number thus found dead, but the most intelligent of the natives—chief of the village—told me that in his judgment there were not less than 20,000 dead pups on the various rookeries of the island, and others still dying. Dr. Akerly, the lessees' physician at the time, made an autopsy of some of the carcasses, and reported that he could find no traces of any diseased condition whatever, but there was an entire absence of food or any signs of nourishment in the stomach. Before Dr. Dawson left I called his attention to what Dr. Akerly had done, but whether he saw him on the subject I can not tell.

And *further deponent saith not.* MILTON BARNES.

Deposition of C. L. Hooper, captain, United States Revenue Marine.

DISTRICT OF COLUMBIA,
City of Washington, ss:

Personally appeared before me, C. L. Hooper, who deposes and says:

From the investigations concerning seal life at sea, personally conducted by me, in the North Pacific during the months of March, April, May, and June; in Bering Sea during the month of August and part of September; in the vicinity of the Aleutian chain during the month of October and part of November, as well as from the experience obtained in six other cruises in Alaskan waters and in Bering Sea, I draw the following conclusions:

There were fewer seals to be seen in the water in the vicinity of the Pribilof Islands during the summer of 1892 than in 1891.

At least 75 per cent, and probably 80 or 90 per cent, of the seals in Bering Sea, outside of a narrow zone around the seal islands, are females, 75 per cent of which are nursing mothers and the remaining 25 per cent virgin cows too immature for bearing.

If barren cows exist at all they are rare. I have never known or heard of but one instance.

In Bering Sea mothers go long distances—as far as 200 miles from the islands—to feed, codfish furnishing the bulk of their food.

They sleep much in the water, are not timid, and are readily taken; and their death means the destruction of three lives—the mother, the fetus, and the pup—on the breeding grounds. The past season is the first in several years that such deaths among the pups have not occurred from this source.

At least 70 per cent, and probably 80 or 90 per cent, of any catch in Bering Sea will be females, either actually bearing or capable of bearing at no distant day. This is borne out by the character of the skins of the *Henrietta*, seized last summer for the violation of the modus vivendi. The captain informed me that nearly all the skins taken were those of male seals. Under my direction an examination was made of these skins by N. Hodgson, a man of experience, in whom I have entire confidence. The catch, as shown by the log and sealing book of this vessel, was made in Bering Sea and consists of 420 skins, 361 of which were found to be females, 33 males, and 26 those of seals too young to determine the sex.

For every 100 seals, the death of which results from pelagic hunting, not more than 65 or 75 skins are secured.

The female seals are widely distributed over the sea, and hence the establishment of zonal areas would be rendered impossible by climatic conditions.

There is a wide belt of 200 or 300 miles between the Commander and Pribilof groups of islands which are devoid of seals, and hence no commingling of the herds occur.

There is no foundation for the statement that during the summer months there are found in Bering Sea bodies of seals which are independent of, unattached to, or do not visit the Pribilof Islands.

The annual migration is caused by climatic conditions and feed supply.

The old bulls are the first to leave the islands, and most of them, together with many half bulls and large bachelors, remain in the waters of Bering Sea and off the coast of Alaska during the entire winter, individuals rarely being found south of the fifty-fifth parallel.

The major part of the herd, consisting of females and their pups and

young males, begin to migrate about the end of October, and by January 1 all of them have begun their migration. These dates are somewhat earlier or later, according to the season.

Those that leave earliest go farthest south, arriving on the coast of California, and those leaving later reach the coast farther up. Their arrival is coincident with the coming of the smelt, herring, and eulachon, upon which they feed.

On reaching the coast their migration route is continually toward the islands, but following the general trend of the coast, the inner limit being about 25 miles offshore and the outer limit from 75 to 100.

As this migration progresses there is a bunching up of the herd, but the seals travel independently and not in bands or schools.

The migration route is from the Pribilof Islands through the passes across to the coast, up the coast and across the northern sweep of the North Pacific to the Aleutian Chain, and through the passes again to the islands.

There is no foundation in the statement that the Pribilof fur seals which migrate have a winter home off any coast. They appear at about the same time off a long line of coast, reaching from California to Washington. When they are so found they are known always to be moving northward up the coast.

The herd, by reason of hunting at sea, has steadily diminished, and such hunting will ultimately destroy the herd unless prohibited in the North Pacific and Bering Sea, for no matter how small the annual catch may be there is a possibility that the hunt will always be encouraged by the higher prices resulting from the decreasd catch, as in the case of the sea otter.

C. L. HOOPER.

Deposition of H. H. McIntyre, superintendent of the Pribilof Islands.

DISTRICT OF COLUMBIA,
City of Washington, ss:

H. H. McIntyre, of West Randolph, Vt., being duly sworn, deposes and says:

I have stated in former depositions my connection with the sealeries of Alaska and opportunities for knowledge concerning them.

When the breeding male seals first arrive upon the islands in the spring they are much more timid and easily disturbed than at a later period, and might perhaps be then driven from their chosen places upon the rookeries, but at a later date, when their relation to their neighbors is fairly established and the cows begin to arrive, no amount of force will dislodge them, and they will die in defense of their harems rather than desert them.

In June, 1872, I carried a photographer's camera near the Reef rookery on St. Paul Island and while focusing the instrument, with my head under the black cloth, and the attention of my attendant was diverted, two old bulls made a savage assault upon me, which I avoided by dodging and running. The camera was left where I had placed it and could not be recovered until seal clubs had been sent for and one of the bulls killed and the other knocked down and stunned. The throwing of stones and noisy demonstrations had no effect whatever upon them. This experience only emphasized what I have observed on many occasions upon the islands. The female seals are more timid, and upon the near approach of man show signs of fear and generally move toward the

water, but their flight is resisted by the bulls, and before impregnation they rarely succeed in escaping. After this occurs the discipline of the harem is relaxed and the females go and come at will.

I neither saw nor heard, in my twenty years' experience as superintendent of the sealeries, of any destruction of pups by reason of stampedes of seals. But I have occasionally witnessed the death of pups from being trampled upon by the old bulls during their battles for supremacy. This is, however, of rare occurrence. Even if stampedes occurred, the light bodies of the females, averaging only 80 or 90 pounds, would pass over a lot of pups without seriously injuring them.

Later in the season, after the old bulls have been superseded on the rookeries by the younger ones, the pups are already able to avoid being run over, and as a matter of fact the death of pups upon the rookeries from any cause whatever prior to the advent of pelagic sealers in Bering Sea was so rare as to occasion no comment.

It was not customary to drive from any points near enough to the breeding rookeries to cause stampedes, and even if this had been done I do not think any injury to the rookeries would have been occasioned by it. It might cause some of the cows to move away, but they would soon return again.

It is very difficult to determine the average number of females properly assignable to a single male, and difficult even to ascertain how many there are in any given family, because the boundaries of the groups are never well defined, and such as would be said by one observer to belong to a certain bull would be declared by another to be in a different harem. The surface of the ground mainly occupied as breeding rookeries is very irregular. Harems sometimes run together. Ledges, bowlders, and lava rocks hinder the uniform mapping of the family groups, and it is not difficult, therefore, to select certain spots and count a number of female seals which appear to be unattached to any male. On the other hand, there are often found full-grown males upon the rookeries at all seasons with no families, and a still larger number with from one to five females each. Such variations have always occurred.

With our present knowledge of seal life, it is impossible to judge with any degree of accuracy how many females may safely be referred to a single male. But, by analogy, it is a very much larger number than has frequently been named as a fair average.

Horse breeders regard a healthy stallion as capable of serving from 40 to 50 mares in a single season; cattle breeders apportion at least 40 cows to a bull, and sheep raisers regard from 30 to 40 ewes as not too many for a single ram, and in the latter case, at least, the season of service is no longer than that permitted to the male seal. I think it would be safe to place an average of 40 or 50 seals to a harem as not excessive.

It is not unusual during the early years of the Alaska Commercial Company's lease to find exceptionally large harems containing from 50 to 100 females each, but we saw no reason to doubt that they were fully served by the male.

The erroneous idea seems to have gained lodgment that during the first decade of the lease a reserve of breeding seals was kept on certain rookeries, and that toward the end of this decade it became necessary to draw on these rookeries because killing 100,000 seals per annum had been too much of a drain upon the herd. This has no foundation in fact. In the early years of the lease the transportation facilities upon the islands, both by land and water, were very limited, and, as the Government agent in charge (Captain Bryant) did not object, we con-

sulted our convenience and drove more frequently from near-by rookeries, but at all times worked the more distant rookeries more or less frequently, as appears by the seal island records. His successors in office theorized that all the rookeries ought to be worked in regular rotation, and so directed. We therefore increased our number of boats and mule teams in order to transport the skins from distant points, and complied with his orders. But we did not do this because of any scarcity of killable seals; no scarcity occurred until pelagic sealing had already made serious inroads. There was no such thing ever thought of upon the islands as "reserves of seals," nor was any different practice pursued in respect to driving from year to year, except that all rookeries were worked more systematically after the first few years of the lease.

In the early years of the first lease a few of the bundles of seal skins shipped from the Pribilof Islands may have weighed as much as 60 pounds, but I would not undertake to say that I have seen any weighing as much. If there were any, the explanation is as follows: The skins in such bundles were those of small wigs, and such skins were bundled together so that the flesh sides should be covered completely and no overlapping edges left.

Excrement is voided by seals upon the rookeries as often, I think, as by other carnivorous animals. Those who assert the contrary apparently expect such discharges as they were accustomed to see in the track of the herbivora. The excrement of the seals is of very soft, often semifluid consistency, and in the porous soil or on the smooth rocks is easily brushed about by the trailing flippers of the seals and lost sight of. Their food is chiefly fish, which is highly organized and contains very little tissue that is not absorbed and assimilated. The excrement, therefore, is limited in quantity, even when the animal is full fed, and from its nature and surroundings easily overlooked.

H. H. McINTYRE.

HABITS, AND MANAGEMENT OF SEALS ON ROOKERIES, AND PELAGIC SEALING.

Deposition of L. A. Noyes, resident physician on the Pribilof Islands from 1880 to 1892.

ST. GEORGE ISLAND, PRIBILOF GROUP,
Alaska, ss:

L. A. Noyes, being duly sworn, deposes and says: I am a native American, and my home is in Randolph, Vt.; I am 52 years of age, and a physician by profession.

In 1880 I entered the service of the lessees of the Pribilof Islands as resident physician at the seal islands, and I have resided here continuously ever since, excepting an occasional visit to my home for a few months in winter, once or twice since 1880.

From June, 1880, to August, 1883, I was on St. George Island, and from 1883 to 1884 I was on St. Paul Island. I then returned to St. George, where I have resided ever since, except the vacations aforesaid.

I have given much time to the study of the Alaskan fur seal and its peculiar habits, and I have watched with care and solicitude the increase and the decline in numbers of the animal on the hauling grounds and rookeries, and also the methods followed by the lessees in taking the skins—the driving and killing of the young males of from

2 to 5 years old, and the salting, curing, bundling, and shipping the skins. I have likewise carefully observed and noted the coming of the seals in the spring, the hauling out at different times of the various ages and sexes, their disposition on the hauling grounds and rookeries, the formation of the "harem" or family, the breaking up of the harems, the scattering of the cows, and the general intermingling of the sexes in September, and finally the departure of the herd from the islands in November or later.

I have read most of all that has been written within the past quarter century on the fur-seal question, and I have listened to and taken part in many of the controversies indulged in by my associates and friends who have spent many years in the fur-seal industry, and whose practical experience, with all its details, gives weight and value to their assertions. It was I who, at the request of the United States Treasury agent in charge of the islands, measured all the rookeries and hauling grounds on St. George Island in 1887,[1] and I have kept the record of the climatic changes on St. George since the United States Government discontinued the meterological station at the Pribilof Islands.

In addition to my services as physician I have occasionally taught the school on St. George, and I have kept the books and accounts for many years for the lessees on the same island. I am thoroughly conversant with the orders issued by the general and local agents of the lessees to the native chiefs in regard to everything appertaining to the business of taking the annual catch and the care of the seals. I have been intimately acquainted with the Treasury agents who have had charge of the islands since 1880, and I acted as assistant agent myself during the temporary absence of the assistant special agent. I am quite familiar with the general and special orders and instructions issued from the Treasury Department from time to time to the special agents for the government of the natives and the care of the rookeries and seal herd; and I know those laws, rules, and regulations have been faithfully adhered to and fully enforced, published reports of transient visitors to the contrary notwithstanding.

The seal islands of St. Paul and St. George, geographically known as the Pribilof Islands, are situated in Bering Sea at about 170° west from Greenwich and 56° north latitude, and they are nearly 200 miles from the nearest land.

The climatic conditions in their immediate vicinity are so peculiar and their formation and situation are so unique that it is not hard to believe they were selected for a home and resting place by the Alaskan fur seal because of their adaptability to that purpose and to that only. The thermometer rarely goes higher than 60° or lower than zero, the average for a number of years being 35°.

In winter the islands are sometimes surrounded by broken ice, which comes from the north, and it will come and go with the tide and currents, generally from January to April, but occasionally remaining later, and again not appearing at all.

In June, July, and part of August the islands are enveloped for days at a time in dense fog, and a clear sunny day is of rare occurrence. The atmosphere is damp and cool, and the rain falls in a sort of fine mist which drenches one through before it is felt.

The islands are of volcanic origin, and the shores are rough, uneven lava rock, and broken rocks and bowlders of like formation. On this

[1] The measurements were made very imperfectly, and I never claimed anything but an approximate measurement. It was my opinion that the numbers were exaggerated, and I so stated at the time.—L. A. N.

rugged shore the Alaskan fur seals make their summer home; here they are born and reared for the first six months of their existence; here they come every spring as regular as time, and here they reproduce their species. The career of the fur-seal herd on these shores is not unlike that of any domesticated animal—it is simply a stock-breeding question.

Areas upon which it is agreeable for the females to breed are carefully reserved and set aside for that purpose.

Each year a sufficient number of breeding bulls are reserved for service on the rookeries. The utmost care is taken that the future of the herd is not jeopardized by the injury or death of a female.

So accustomed have the seals become to the presence of the natives that the timidity and shyness manifested in the ocean is not shown on the islands. In their infancy the pups will approach a native without fear, and later on they are readily handled and the sexes separated, should it be necessary to make a killing of pups for food. In the handling, management, and enlargement of the seal herd there is as much amenability to domestication as there is in a band of range cattle.

The male breeding seals, or bulls, begin to haul out on the breeding rookeries early in May, and they come in more and more rapidly as the month advances, and, selecting their respective stations, lie down and sleep almost continuously until within a few days of the coming of the females, or cows, when they assume a sitting posture, and set up a bellowing noise peculiar to themselves, which I suppose to be a "call" to the approaching herd of cows. It is at this time the bull appears at his best and in his most aggressive mood, and none but the physically strong and successful are allowed to remain within striking distance of the veterans.

The cows begin to haul out in June, and practically they are all on the breeding rookeries by July 15. Immediately on arriving they are taken possession of by the bulls, the strongest and most aggressive securing the greatest number and guarding with jealous care and increasing vigilance.

As a rule the pups are born soon after the cows reach the shore, though it occasionally happens that a cow will be two or three days on the rookery before bringing forth her young.

I think the pups are all born by July 22, and by the middle of August the cows have been fertilized for the next year, after which the harems are abandoned and the bulls begin to leave the islands, and the females and bachelors (or young males) intermingle indiscriminately on the rookeries. From the time the bulls haul out in May till they leave in September they neither eat nor drink, and their lean and lanky appearance in September is in striking contrast with their rotund form and sleek and glossy coats in May.

When the pup is born it is utterly helpless and dependent. It is not amphibious, and would drown if put into water. I have often watched the pups near the water's edge when in stormy weather the surf carried them off, and in every instance they drowned as soon as they went into deep water. The pup is entirely dependent on its dam for sustenance, and when it is a few days old she goes into the sea to feed, returning at intervals of a few hours at first, and gradually lengthening the time as the pups grow older and stronger, until she will be sometimes away for a whole week. During these journeys, in my opinion, she goes a distance of from 40 to 200 miles from the islands to feed, and it is at this time she falls a prey to the pelagic hunter.

Returned to the rookery, the cow goes straight to the spot where she left her pup, and it seems she instantly recognizes it by smelling; and

it is equally certain that the pup can not recognize its dam. I have often seen pups attempt to suck cows promiscuously, yet no cow will suckle any pup but her own. When five or six weeks old the pups begin to run around and form bunches or "pods;" at seven to eight weeks old they try the water at the edge, where, after paddling in the shallows, they gradually learn to swim. After becoming expert swimmers they continue to show a preference for land, where they generally remain if not driven into the water by heavy rain or warm sunshine. They make no effort to secure sustenance of any sort beyond that furnished by their dams.

I have examined many pups at the food killings in November, and I never found anything but milk in their stomachs.

The young males or bachelors, whose skins are taken by the lessees, begin to haul out in May, and they continue to haul out until late in July, the older ones coming first and the younger ones later; and they herd by themselves during May, June, and July, because were they to approach the breeding grounds the bulls would drive them off or destroy them.

The bachelors of from 2 to 5 years old are the only seals driven or killed on the seal islands by anyone or for any purpose, and the sensational stories told of how they are tortured on the drive have no foundation in fact. When necessary to make a drive for skins from any given rookery, the local agent of the lessees informs the Treasury agent, and obtains his permission to make the drive. No seals are driven without the consent of the Treasury agent in charge of the island. All being ready, the native chief takes a squad of men to the hauling ground, where the seals are quietly surrounded without disturbing the breeding rookery, and they are then driven slowly along to the killing ground.

Since the improved methods of 1879 there are no drives of greater length than 2½ miles, and the majority of them do not exceed 1 mile. So carefully and so slowly are the drives made, the men driving are relieved every hour, because of the slow motion they get chilled on the road. Arrived at the killing grounds, the seals are driven out from the main body in "pods" of 20 or 30 at a time, and experienced men club and kill the desirable ones, and allow all that remain to return at their leisure to the adjacent waters. The most experienced men do the skinning, and after them come the women and children, who carry off the carcasses for food and the fat or blubber for winter fuel.

In accordance with instructions from the Department, the Treasury agent is always present at the killings, and he has full power and authority to interfere in all cases where there is cruelty practiced or attempted.

All seals killed by the lessees for skins are killed between June 1 and July 30, and generally the season closes on the 20th of July.

After the regular season closes, in July, the natives kill, weekly, for food, from 100 to 200 male seals whose skins are large enough to be accepted as part of the next year's quota; and it is during these food drives in August, September, and October that an occasional female is accidentally killed. Being mixed with the bachelors at this time, some females are driven and accidentally killed. The killing of a female is the greatest crime known on the seal islands and is never done intentionally. Of this I am most positive, for I know that every possible precaution has been taken to guard against it, and I believe there have not been 100 females killed on St. George Island since 1880, if I may except some killed by poachers who were driven off before they secured the skins of the seals they had killed.

Never since the islands have been American property has there been indiscriminate killing done upon them, nor has there been a desire on the part of anyone connected with them to injure or damage or waste seal life; on the contrary, everything has been done by the lessees, past and present, and by the United States, to foster and protect it, and to improve the methods of driving the seals, so that the herds might grow and thrive and increase, and perpetuate themselves indefinitely. Laws, rules, and regulations were made from time to time, prompted by experience, with a view to add to the value of the property and to abolish everything that was not beneficial and in strict accord with the most humane principles. To this end all long drives were prohibited and arrangements made by which the killing grounds have been brought as near the hauling grounds as is practicable without being injurious to the breeding rookeries.

Orders were issued by which the driving is regulated in such manner that no hauling grounds are molested or disturbed more than another, and, being taken in rotation, the seals are allowed several days rest between drives. The rules for driving are so strict, so rigidly enforced, and so faithfully carried out that I hardly know how they could be improved upon.

In my opinion the cows are the only seals that go into the sea to feed from the time they haul out in May till they leave the islands in November or December, and my opinion is based on the fact that the seals killed in May have plenty of food in their stomachs, mostly codfish, while those killed in July have no signs of anything like food in their stomachs.

Again, the males killed for food as the season advances are found to be poorer and poorer, and in all cases after July their stomachs are empty. I am convinced, therefore, that none but mother seals go into the sea to feed during the summer months, and this accounts for the sudden decrease in the herd after the sealing schooners became so numerous in Bering Sea about 1884. The decrease in the number of seals coming to the islands in the last three or four years became so manifest to everyone acquainted with the rookeries in earlier days that various theories have been advanced in an attempt to account for the cause of this sudden change, and the following are some of them: First, a dearth of bulls upon the breeding rookeries; second, impotency of bulls, caused by overdriving while they were young bachelors, and third, an epidemic among the seals.

The "dearth-of-bulls theory" has been thoroughly and impartially investigated without discovering a cow of 3 years old or over on the rookeries without a pup by her side at the proper time, and I am convinced that the virgin females coming onto the rookeries for the first time are the only ones to be found there without pups.

The investigation established the additional fact that hundreds of vigorous bulls were lying idle on the rookeries without cows and many others had to content themselves with only one or two.

The theory of "impotency of the bulls through overdriving" while young was also found to be untrue, and it was shown that after 1878 all long drives on both islands had been abolished, and instead of driving seals from 6 to 12 miles, as was done in Russian times, none were driven to exceed 2½ miles.

It is also a well-known fact that none but the physically strong and aggressive bulls can hold a position on the rookeries and that a weak or an impotent animal has no desire to go there.

The epidemic theory was urged very strongly in 1891, when the rook-

eries were found covered with dead pups, but a careful and technical examination was made on several of the dead bodies without discovering a trace of organic disease, while starvation was so apparent that those who examined them decided that it was the true cause of their death. Had sickness or disease attacked the seal herd, it is only reasonable to suppose a few grown seals would be found dead where so many young ones had died so suddenly, but the most diligent search has failed to find a grown seal dead upon the islands from unknown causes.

From the discovery of the islands until the present time the flesh of the fur seal has been the daily meat ration of the natives and of the white people, and yet it is a fact that a tainted or diseased carcass has never been known.

In my opinion the solution of the problem is plain. It is the shotgun and rifle of the pelagic hunter which are so destructive to the cow seals as they go backward and forward to the fishing banks to supply the waste caused by giving nourishment to their young.

At this time they are destroyed by thousands and their young of but a few weeks old must necessarily die of starvation, for nature has provided no other means of subsistence for them at this time of life.

Unless the pelagic hunter is prevented from taking seals in Bering Sea and in the North Pacific, the Alaskan fur seal will soon cease to be of commercial value.

L. A. NOYES, M. D.

HABITS AND MANAGEMENT OF SEALS AND RULES OF FUR COMPANIES—PELAGIC SEALING.

Deposition of J. C. Redpath, agent of lessees on St. Paul Island.

ST. PAUL ISLAND, PRIBILOF GROUP,
Alaska, ss:

J. C. Redpath, being duly sworn, deposes and says: I am an American citizen, a native of Connecticut, and I am 48 years of age. At present I am a resident of St. Paul Island, Alaska. I have resided on the seal islands of St. George and St. Paul since my first coming to Alaska in 1875. My present occupation is that of local agent on St. Paul Island for the present lessees, the North American Commercial Company. I have a practical knowledge of, and am thoroughly conversant with, the habits and conditions of the fur seal as it exists on the Pribilof Islands of St. George and St. Paul, and also of the methods adopted and practiced in the taking of the skins, and of the several efforts made by the former and present lessees, as experience taught them, to increase the herd and to build up the rookeries and perpetuate seal life. I have had a personal experience of seventeen seasons on the killing grounds, in different situations, from that of seal clubber to foreman, several years of which I have been the resident local agent. My position as local agent has led me to make a careful study of the seal question, and it is my duty to report from time to time to the general agent of the lessees the result of my observations.

The Alaskan fur seal is a native of the Pribilof Islands, and, unless prevented, will return to these islands every year with the regularity of the season. All the peculiarities of nature that surround the Pribilof group of islands, such as low and even temperature, fog, mist, and perpetually clouded sky, seem to indicate their fitness and adaptability as *a home* for the Alaskan fur seal; and with an instinct bordering on

reason they have selected these lonely and barren islands as the choicest spots of earth upon which to assemble and dwell together during their six months' stay on land; and annually they journey across thousands of miles of ocean and pass hundreds of islands, without pause or rest, until they come to the place of their birth. And it is a well-established fact that upon no other land in the world do the Alaskan fur seal haul out of water.

Early in May the bulls approach the islands and, after cautiously and carefully reconnoitering the surroundings, haul out and select their situations on the rookeries, where they patiently await the coming of the cows. When they first appear upon the rookeries the bulls are fat and sleek and very aggressive, but after a stay of from three to four months, without food, they crawl away from the rookeries in a very lean condition. In my opinion the bull seal returns to the spot he occupied the preceding years, and I know of several instances, where he could be distinguished by the loss of an eye or a flipper, in which he actually did return for a series of years to the same spot.

The mother seals or cows commence to haul about June 10, and nearly all of them are on the rookeries by July 15, and I believe they bring forth their young almost immediately after reaching their places on the rookeries. When the pup is from four to six days old the mother goes into the water for food and, as time passes, her stay becomes longer, until finally she will be away from her pup for several days at a time, and sometimes for a whole week. During these longer migrations she often goes 200 miles from the rookery, and I have been informed by men who were engaged in the trade of pelagic hunting that they had taken "mothers in milk" at a distance of 200 miles from the seal islands.

No cow will nurse any pup but her own, and I have often watched the pups attempt to suck cows, but they were always driven off; and this fact convinces me that the cow recognizes her own pup and that the pup does not know its dam. At birth and for several weeks after, the pup is utterly helpless and entirely dependent on its dam for sustenance; and should anything prevent her return during this period it dies on the rookery. This has been demonstrated beyond a doubt since the sealing vessels have operated largely in Bering Sea during the months of July, August, and September, and which, killing the cows at the feeding grounds, left the pups to die on the islands.

At about 5 weeks old the pups begin to run about and congregate in bunches or "pods," and at 6 to 8 weeks old they go into the shallow water and gradually learn to swim.

They are not amphibious when born, nor can they swim for several weeks thereafter, and were they put into the water would perish beyond a doubt, as has been well established by the drowning of pups caught by the surf in stormy weather. After learning to swim the pups still draw their sustenance from the cows, and I have noticed at the annual killing of pups for food in November that their stomachs were always full of milk, and nothing else, although the cows had left the island some days before. I have no knowledge of the pups obtaining sustenance of any kind except that furnished by the cows; nor have I ever seen anything but milk in a dead pup's stomach. The young males from 2 to 5 years old, whose skins are taken by the lessees, begin to haul out on land in May, and they continue to haul out till July. They herd by themselves during the months of May, June, and July, and they do this because, during the breeding season, they dare not approach the breeding rookeries, or the bulls would destroy them Being thus debarred from a position on the breeding rookeries or from

intermingling with the cows, they herd together on the hauling grounds, where they are easily approached and surrounded by the natives, who drive them to the killing grounds without disturbing the breeding rookeries.

Young males killed in May and June, when examined are found to be in prime condition, and their stomachs are filled with fish—principally codfish—but those killed later in the season are found to be poor and lean and their stomachs empty; which shows that the males rarely leave the islands for food during the summer months.

Statute law forbids the killing of the female seal, and nature regulates the matter so that there is no danger of their being driven or killed during the regular killing season, which takes place in June and July, when all the "killing for skins" is done; and after all my experience here I am free to say that a small fraction of 1 per cent would represent all the females killed on the islands since they became the property of the United States.

The compact family arrangement so tenaciously adhered to during the breeding season becomes relaxed in August, and the females scatter, and a few of them mix with the young males, and when the natives make a drive for food it occasionally happens that a female will accompany the males, and sometimes one or two may be accidentally killed. I use the word "accidentally" advisedly, because there is no good reason why the natives or the lessees should kill a female designedly, as the skin is of no more use or value (if so much), nor its flesh as good for food as is that of the male. And, excepting accidents, it is a fact that no female seals are, or ever were, killed on the Pribilof Islands since American rules and regulations were established there.

The regular killing season for the skins under the lease begins June 1 and ends practically the last of July; and during this period the first-class Alaskan fur-seal skins are taken. The seals are driven from the hauling to the killing grounds by experienced natives under the orders of the native chief, and the constant aim and object of all concerned is to exercise the greatest care in driving, so that the animals may not be injured or abused in any manner. As the regulations require the lessees to pay for every skin taken from seals killed by the orders of their local agents, and as the skin of an overheated seal is valueless, it is only reasonable to suppose that they would be the last men living to encourage and allow their employees to overdrive or in any manner injure the seals. I know that the orders given to me as local agent were always of the most positive and emphatic kind on this point, and they were always obeyed to the letter. Instead of overdriving or neglecting the seals, the lessees have endeavored to do everything in their power to shorten the distance between the hauling and killing grounds, or between the hauling grounds and the salt house.

Before the Alaska Commercial Company leased the seal islands in 1870 it was a common practice to drive seals from Northeast Point to the village of St. Paul Island, a distance of 12 miles, and from Zapadnie to the village of St. George Island, a distance of 6 miles, across a very rough and rugged country.

From Halfway Point and from Zapadnie on St. Paul Island seals were driven respectively 5 and 6 miles. When the Alaska Commercial Company took control of the islands the drive from Northeast Point was prohibited, and a salt house and other necessary buildings erected within 2 miles of the killing ground, and all the skins taken there were salted and stored and shipped from Northeast Point. In 1879 a killing ground was made and a salt house built at Halfway Point, within 2

miles of the hauling grounds, and all skins taken at the Point are salted there. At Zapadnie the same year a killing ground was made within a mile of the hauling ground, and the skins taken there are taken to the village salt house in boats, or when the weather is unfavorable by team and wagon.

Since 1878 there has not been a drive made on St. Paul Island to exceed 2 miles. At Zapadnie, St. George, a salt house was built about 1875 and the 6-mile drive prohibited and a trail made at great expense across the island, over which the skins are taken on pack saddles to the village. Since 1874 no seals have been driven on St. George Island to exceed 2½ miles.

Although the seals are comparatively tame after being on the land for a short time and do not get scared so easily as is commonly supposed, the rules and regulations of the Treasury Department are very strict on the question of absolute protection to the seals on the islands, and the Treasury agents have always most rigidly enforced them.

It is unlawful to fire a gun on the islands from the time the first seal appears in the spring until the last one leaves at the end of the season; and in order to properly enforce this law the firearms are taken from the natives and locked up in the Government house in care of the Treasury agents.

No person is allowed to go near a rookery unless by special order of the Treasury agent, and, when driving from the hauling grounds, the natives are forbidden to smoke or make any unusual noise, or to do anything that might disturb or frighten the seals. All driving is done when the weather is cool and moist, and when the condition of the weather demands it the drives are made in the cool of the night, and in no case are seals driven at a higher rate of speed than about half a mile an hour. So carefully is the driving done that it has been found necessary to divide the native drivers into several "watches," which relieve each other on the road, because the pace being so slow the men get cold.

From 1875 to 1883 it was no uncommon thing for the lessees to take the annual quota of 100,000 skins between June 1 and July 20, and yet there was no sign of any decrease, but rather an expansion of most of the rookeries.

I do not pretend to be able to say how many seals there are, or ever were, on the rookeries; nor do I believe anybody else can tell; for the rookeries are so broken and filled with rocks it is impossible to estimate the number of seals upon them with any approach to accuracy. The lines of expansion and contraction are plain enough, and can be seen and understood by the whole community.

Until 1884 sealing schooners were seen but very seldom near the islands or in Bering Sea, and the few seals taken by the hunters who raided the rookeries occasionally are too paltry to be seriously considered, because the raids were so few, and the facilities for taking many seals off so utterly insignificant. In 1884 the sealing schooners became numerous. I believe there were about 30 in the sea that year, and they have increased very rapidly every year since, until now they are said to be about 120. As the schooners increased the seals decreased, and the lines of contraction on the rookeries were noticed to draw nearer and nearer to the beach, and the killable seals became fewer in numbers and harder to find. In 1886 the decrease was so plain that the natives and all the agents on the islands saw it and were startled, and theories of all sorts were advanced in an attempt to account for a cause.

A dearth of bulls on the breeding rookeries was a pet theory of one

or two transient visitors, but it only needed a thorough investigation of the condition of the rookeries to convince the most skeptical that there were plenty of bulls, and to spare, and that hardly a cow could be found on the rookeries without a pup at her side.

For five years I have given this particular subject my most earnest attention, and every succeeding year's experience has convinced me that there is not, and never was, a dearth of bulls. The theory of impotency of the young bulls because of overdriving when young is not worthy of consideration by any sane or honest man who has ever seen a bull seal on a breeding rookery; and as I have already answered the question of overdriving, I will only add here that no young bull goes upon a breeding rookery until he is able to fight his way in, and an impotent bull has no desire to fight, nor could he win a position on the rookery were he to attempt it. The man is not alive who ever saw a 6 or 7 year old bull seal impotent.

Another theory, equally untrue, was that an epidemic had seized the herd, but investigations of the closest kind have never revealed the death on the islands of a full-grown seal from unknown causes. Let it be remembered that the flesh of the seal is the staple diet of the natives, and that it is eaten daily by most of the white employees as well; and yet it is true that a sign of taint or disease has never been found on a seal carcass in the memory of man. It was not until so many thousands of dead pups were found upon the rookeries that the problem was solved.

The truth is that when the cows go out to the feeding grounds to feed they are shot and killed by the pelagic hunter, and the pups, deprived of sustenance, die upon the rookeries. Excepting a few pups killed by the surf occasionally, it has been demonstrated that all the pups found dead are poor and starved, and when examined their stomachs are found to be without a sign of food of any sort. In 1891 the rookeries on St. Paul Island were covered in places with dead pups, all of which had every symptom of having died of hunger, and on opening several of them the stomachs were found to be empty.

The resident physician, Dr. Akerly, examined many of them and found in every instance that starvation was the cause of death. The lowest estimate made at the time, placing the number of dead pups on the rookeries at 25,000, is not too high

It has been said that man can do nothing to facilitate the propagation of the fur seal. My experience does not support this. The reservation of females and the killing of the surplus males, so that each bull can have a reasonable number of cows, is more advantageous to the growth of the rookeries than when in a state of nature bulls killed each other in their efforts to secure a single cow.

The same care can be and is exercised in the handling and management of the seal herd as is bestowed by a ranchman upon his bands of ranging stock, and is productive of like results. The seals have become so accustomed to the natives that the presence of the latter does not disturb them. The pups are easily handled by the natives, and formerly, when used as an article of food, thousands of pups were actually picked up and examined, in accordance with Government requirement, to avoid the killing of a female. So easily are the seals controlled that, when a drive of bachelors is made to the killing grounds, a guard of two or three small boys is sufficient to keep them from straying, and from the general band any number from one upward can be readily cut out. It is possible in the future, as it has been in the past, to reserve unmolested suitable areas to serve as breeding grounds; to *set aside each* year a proper number of young males for future service

upon the rookeries, and by the application of the ordinary stock-breeding principles not only to perpetuate, but to rapidly increase, the seal herd.

To one who has spent so many years among the seals as I have, and who has taken so much interest in them, it does appear to be wrong that they should be allowed to be so ruthlessly and indiscriminately slaughtered by pelagic hunters, who secure only about one-fourth of all they kill. There is no doubt in my mind that unless immediate protection be given to the Alaskan fur seal the species will be practically destroyed in a very few years; and in order to protect them pelagic hunting must be absolutely prohibited.

The foregoing is substantially the same testimony that I gave to the commissioners who visited the islands in 1891.

J. C. REDPATH.

PRIBILOF ROOKERIES.

Deposition of Charles J. Goff, Treasury agent in charge of Pribilof Islands.

DISTRICT OF COLUMBIA,
City of Washington, ss:

Charles J. Goff, of Clarksburg, W. Va., being duly sworn, deposes and says: I am 45 years of age; during the years 1889 and 1890 I occupied the position of special Treasury agent in charge of the Pribilof Islands. I was located on St. Paul Island, only visiting St. George Island occasionally. About the 1st of June, 1889, I arrived on St. Paul Island, and remained there until October 12, 1889, when I returned to San Francisco for the winter. Again went to the islands in 1890, arriving there about the last week in May, and remaining until August 12, 1890. Since that time I have never been on the islands. My principal observations as to seal life upon the islands were confined to St. Paul Island, as I only visited St. George Island occasionally.

During my first year on the islands the Alaska Commercial Company was the lessee thereof, and during my second year the North American Commercial Company. In 1889 I made careful observations of the rookeries on St. Paul Island and marked out the areas covered by the breeding grounds; in 1890 I examined these lines made by me the former year and found a very great shrinkage in the spaces covered by breeding seals.

In 1889 it was quite difficult for the lessees to obtain their full quota of 100,000 skins. So difficult was it, in fact, that in order to turn off a sufficient number of 4 and 5 year old males from the hauling grounds for breeding purposes in the future the lessees were compelled to take about 50,000 skins of seals of 1 or 2 years of age. I at once reportep this fact to the Secretary of the Treasury, and advised the taking of a less number of skins the following year. Pursuant to such report the Government fixed upon the number to be taken at 60,000, and further ordered that all killing of seals on the islands should stop after the 20th day of July. I was further ordered that I should notify the natives upon the Aleutian Islands that all killing of seals while coming from or going to the seal islands was prohibited. These rules and regulations went into effect in 1890, and pursuant thereto I posted notices for the natives at various points along the Aleutian chain, and saw that the orders in relation to the time of killing and number allowed to be killed were executed upon the islands. As a result of the enforcement of these

regulations the lessees were unable to take more than 21,238 seals of the killable age of from 1 to 5 years during the season of 1890, so great had been the decrease of seal life in one year, and it would have been impossible to obtain 60,000 skins even if the time had been unrestricted.

The Table A appended to this affidavit[1] shows how great had been the decrease on St. Paul Island hauling grounds, bearing in mind the fact that the driving and killing was done by the same persons as in former years, and was as diligently carried on, the weather being as favorable as in 1889 for seal driving. I believe that the sole cause of the decrease is pelagic sealing, which from reliable information I understand to have increased greatly since 1884 or 1885. Another fact I have gained from reliable sources is that the great majority of seals taken in the open sea are pregnant or females in milk. It is an unquestionable fact that the killing of these females destroys the pups they are carrying or nursing. The result is that this destruction of pups takes about equally from the male and female increase of the herd, and when so many male pups are killed in this manner, besides the 100,000 taken on the islands, it necessarily affects the number of killable seals. In 1889 this drain upon male seal life showed itself on the islands, and this, in my opinion, accounts for the necessity of the lessees taking so many young seals that year to fill out their quota.

As soon as the effects of the pelagic sealing were noticed by me upon the islands I reported the same, and the Government at once took steps to limit the killing upon the islands, so that the rookeries might have an opportunity to increase their numbers to their former condition; but it will be impossible to repair the depletion if pelagic sealing continues. I have no doubt, as I reported, that the taking of 100,000 skins in 1889 affected the male life on the islands, and cut into the reserve of male seals necessary to preserve annually for breeding purposes in the future, but this fact did not become evident until it was too late to repair the fault that year. Except for the numbers destroyed by pelagic sealing in the years previous to 1889 the hauling grounds would not have been so depleted, and the taking of 100,000 male seals would not have impaired the reserve for breeding purposes or diminished to any extent the seal life on the Pribilof Islands. Even in this diminished state of the rookeries in 1889 I carefully observed that in the majority of cases the 4 and 5 year old males were allowed to drop out of a "drive" before the bachelors had been driven any distance from the hauling grounds. These seals were let go for the sole purpose of supplying sufficient future breeders.

A few seals are injured by redriving (often conflicted with overdriving and sometimes so called), but the number so injured is inconsiderable and could have no appreciable effect upon seal life through destroying the virility of the male. The decrease, caused by pelagic sealing, compelled whatever injurious redriving has taken place on the islands, as it was often necessary to drive every two or three days from the same hauling grounds, which caused many seals let go in a former "drive" to be driven over again before thoroughly rested. If a "drive" was made only once a week from a certain hauling ground, as had been the case before pelagic sealing grew to such enormous proportions and depleted the rookeries, there would be no damage at all resulting from redriving.

In my opinion pelagic sealing is the cause of redriving on the islands, the depletion of the rookeries, and promises to soon make the Alaska

[1] See "Island Records," Appendix.

fur-seal herd a thing of the past. If continued as it is to-day, even if killing on the islands was absolutely forbidden, the herd will in a few years be exterminated. I am, therefore, of the opinion that pelagic sealing should be absolutely prohibited both in Bering Sea and the North Pacific Ocean. If this is done and a few years are allowed the seal herd to recover from the enormous slaughter of the past seven years the Pribilof Islands will produce their 100,000 skins as heretofore for an indefinite period.

I hereby append to and make a part of this affidavit a table, marked A,[1] giving the number of seals killed each day on the island of St. Paul during the years 1889 and 1890 up to the 20th day of July.

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CHARLES J. GOFF.

MANAGEMENT OF SEAL KILLING, AND PELAGIC SEALING.

Deposition of Abial P. Loud, special assistant Treasury agent on Pribilof Islands.

DISTRICT OF COLUMBIA,
City of Washington, ss:

Abial P. Loud, being duly sworn, deposes and says: I am a resident of Hampden, Me., and am 55 years of age. On April 4, 1885, I was appointed special assistant Treasury agent for the seal islands, and immediately started for the islands, arriving at the island of St. Paul on May 28 or 30. Spent that season on St. Paul Island, and returned for the winter to the States, leaving the islands on the 18th of August. Went back again next spring, arriving there in latter part of May, and remained until August, 1887, on St. Paul Island. Spent the season of 1888 and 1889 on St. George Island, returning in the fall of 1889 to the States. In 1889 I spent some time in the fall on St. Paul Island. On whichever island I was located I always kept careful watch and made frequent examinations of the rookeries during this entire period. During the time from 1885 to 1889 there was a very marked decrease in the size of the breeding grounds on St. Paul Island, and from 1887 to 1889 I also noticed a great decrease in the areas covered by the rookeries on St. George Island.

In his reports of 1886 and 1887 George R. Tingle, special Treasury agent in charge of the seal islands, reported having measured the rookeries on the islands, and that the seals had largely increased in number, giving the increase at about 2,000,000. From this report I dissented at the time, as I was unable to see any increase, but, on the contrary, a perceptible decrease, in the rookeries. I expressed my views to many on the islands, and all agreed that there had been no increase in seal life. I do not think that there was a single person on the island except Mr. Tingle who thought there had been an increase, or, in fact, that there had not been a decrease in seal life. The measurements of the rookeries on which Mr. Tingle relied were made with a common rope by ignorant natives while the seals were absent from the islands, the grounds covered by them being designated by Mr. Tingle from memory. Even if these measurements had been correct, which was impossible, I

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[1] See "Island Records," Appendix.

do not believe it is possible to calculate even approximately the number of seals upon the rookeries because of the broken nature of the ground and the irregular outlines of the breeding grounds. While I was on the islands I attended nearly every drive of the bachelor seals from the hauling grounds to the killing grounds, and these drives were conducted by the natives with great care, and no seals were killed by overdriving, plenty of time being always given them to rest and cool off. A few were smothered by the seals climbing over each other when wet; but the number was very inconsiderable, being a fraction of 1 per cent of those driven, and did not to any extent affect the seal life on the islands. The greatest care was always taken to avoid overdriving both by the Government officers and employees of the lessees.

During my experience (and I was on the killing ground at every killing that took place while I was on the islands) I never saw a male seal which had been injured by being redriven several times from the same hauling ground. I am convinced that while I was there there was not a single case in which the virility of a male seal was destroyed or impaired in the slightest degree by driving, redriving, or overdriving, and I took particular notice of the condition of the males during each drive. The males old enough for service on the breeding grounds were always allowed to return to the hauling ground from a drive, and I am satisfied a sufficient number of males was always reserved for future breeding purposes. A suggestion was made to the Secretary of the Treasury in the fall of 1885 that some old bulls should be killed, but the Secretary declined to permit such animals to be destroyed. I am convinced that the decrease in the rookeries was caused entirely by open-sea sealing. As I was not present on the islands in the fall of 1885, I am unable to make a statement as to the number of dead pups on the rookeries in that year, but in 1886 I saw a large number of dead pups lying about. These pups were very much emaciated, and evidently had been starved to death. I account for this by the killing of the mothers by open sea sealers before the pups were weaned, and because a mother will not suckle any pup except her own.

In 1887 the number of dead pups was much larger than in 1886. In 1888 there was a less number than in 1887 or in 1889, owing, as I believe, to a decrease of seals killed in Bering Sea that year, but in 1889 the increase again showed itself. I believe the number of dead pups increased in about the same ratio as the number of seals taken in Bering Sea by pelagic sealers. While I was on the island there were not more than three or four raids on the rookeries to my knowledge, and I think that the destruction to seal life by raiding rookeries is a small part of 1 per cent as compared with the numbers taken by killing in the water. Another fact in connection with open-sea sealing is that the great majority of seals killed are females, and that a great part of the females are pregnant or in milk. The milking females are most all killed while visiting the feeding grounds, which are distant 40 or 60 miles, or even farther from the islands. The female necessarily feeds so she can supply nourishment for her young, while the males during the summer seldom leave the islands. This accounts for the large number of females killed in Bering Sea. In July, 1887, I captured the poaching schooner *Angel Dolly* while she was hovering about the islands. I examined the seal skins she had on board, and about 80 per cent were skins of females. In 1888 or 1889 I examined something like 5,000 skins at Unalaska which had been taken from schooners engaged in pelagic sealing in Bering Sea, and at least 80 to 85 per cent were skins of females.

I have conversed with the captains of several marauding schooners

and others who were employed in pelagic sealing have informed me that they usually use rifles in shooting seals in the water. Some, however, use shotguns, but to no great extent. From these conversations I should judge they did not secure more than one-half of the seals killed, and this, I think, is a large estimate of the number secured. I am of the opinion that the Pribilof seal herd should be protected both in Bering Sea and the North Pacific Ocean. If an imaginary line were drawn about the islands, 30 or 40 miles distant therefrom, within which sealing would be prohibited, this would be little protection to seal life, for all the poachers whom I interviewed acknowledged that they could get more seals in the water near the fishing banks, 30, 40, or more miles from the islands, than in the immediate vicinity thereof, and the hunters on the schooners always complained if they got much nearer than 40 miles of the islands. I am certain that even if sealing were prohibited entirely upon the islands the seal herd would in a short time be exterminated by pelagic sealing, if permitted, because the females—that is, the producers—are the seals principally killed by open-sea sealing.

ABIAL P. LOUD.

PELAGIC SEALING—MANAGEMENT.

Deposition of Kerrick Artomanoff, native chief, resident of St. Paul Island.

ALASKA, UNITED STATES OF AMERICA,
St. Paul Island, Pribilof Group, ss:

Kerrick Artomanoff, being duly sworn, deposes and says: I am a native Aleut and reside on St. Paul Island, Pribilof group, Alaska. I was born at Northeast Point, on St. Paul Island, and am 67 years of age. I have worked on the sealing grounds for the last fifty years and am well acquainted with the methods adopted by the Russian and American Governments in taking of fur-seal skins and in protecting and preserving the herds on the island. In 1870, when the Alaska Commercial Company obtained a lease of the islands, I was made chief, and held the position for seventeen years.

It was my duty as chief to take charge of and conduct the drives with my people from the hauling to the killing grounds. The methods used by the Alaska Commercial Company and the American Government for the care and preservation of the seals were much better than those used by the Russian Government. In old Russian times we used to drive seals from Northeast Point to the village, a distance of nearly 13 miles, and we used to drive 5 or 6 miles from other hauling grounds; but when the Americans got the islands they soon after shortened all the drives to less than 3 miles.

From 1870 to 1884 the seals were swarming on the hauling grounds and the rookeries, and for many years they spread out more and more. All of a sudden, in 1884, we noticed there were not so many seals, and they have been decreasing very rapidly ever since. My people wondered why this was so, and no one could tell why until we learned that hunters in schooners were shooting and destroying them in the sea. Then we knew what the trouble was, for we knew the seals they killed and destroyed must be cows, for mostly all the males remain on or near the islands until they go away in the fall or fore part of the winter. We also noticed dead pups on the rookeries that had been starved to death. These young pups have increased from year to year since 1887,

and in 1891 the rookeries were covered with dead pups. In my sixty-seven years' residence on the islands I never before saw anything like it. None of our people have ever known of any sickness among the pups or seals, and have never seen any dead pups on the rookeries, except a few killed by the old bulls when fighting, or by drowning when the surf washed them off. If they had not killed the seals in the sea there would be as many on the rookeries as there was ten years ago. There was not one-fourth as many seals in 1891 as there was in 1880.

The fur seal goes away from the island in the fall or winter and he returns in May or June; and I believe he will haul up in the same place each year, for I particularly noticed some that I could tell that hauled up in the same place for a number of years; and when we make drives, those we do not kill, but let go into the water, are all back where we took them from in a few hours. The pups are born between the middle of June and the middle of July, and can not swim until they are 6 or 7 weeks old; and if born in the water they would die. I have seen the surf wash some of the young pups into the sea, and they drowned in a very short time. In four or five days after it is born the mother seal leaves her pup and goes away in the water to feed, and when the pup is 2 or 3 weeks old the mother often stays away for five or six days at a time. The mother seals know their own pups by smelling them, and no seal will allow any but her own pup to suck her. When the pups grow to be 6 or 8 weeks old they form in "pods" and work down to the shore, and they try the water at the edge until they learn to swim. They will remain on the island until November, and, if not too cold, will stay till December. I have seen them swimming around the island late in January. All the seals when they leave the islands go off south, but I think they would stay around here all winter if the weather was not so cold.

When they come back to the islands they come from the south, and I think they come from the North Pacific Ocean over the same track that they went. The females go upon the rookeries as soon as they arrive here, but the yearlings, males and females, herd together. I think they stay in the water most of the time the first year, but after that they come regularly to the hauling grounds and rookeries, but do not come as early in the season as they do after they are 2 years old. Male seals from 2 to 6 years old do not go on the breeding rookeries, but haul out by themselves. The female seal gives birth to but one pup every year, and she has her first pup when she is 3 years old. The male seal establishes himself on the breeding rookery in May or June, when he is 7 or 8 years old, and he fights for his cows and does not leave the place he has selected until August or September. Our people like the meat of the seal, and we eat no other meat so long as we can get it.

The pup seals are our chicken meat, and we used to be allowed to kill 3,000 or 4,000 male pups every year in November; but the Government agent forbade us to kill any in 1891, and said we should not be allowed to kill any more, and he gave us other meat in place of pup meat, but we do not like any other meat as well as the pup-seal meat. We understand the danger there is in the seals being all killed off, and that we will have no way of earning our living. There is not one of us but what believes if they had not killed them off by shooting them in the water there would be as many seals on the island now as there was in 1880, and we could go on forever taking 100,000 seals on the two islands. But if they get less as fast as they have in the last five or six years, there will be none left in a little while.

KERRICK ARTOMANOFF.

Deposition of Daniel Webster.

ALASKA, UNITED STATES,
St. George Island, Pribilof Group, ss:

Daniel Webster, being duly sworn, deposes and says: I am 60 years of age, and am a resident of Oakland, Cal.; my occupation is that of local agent for the North American Commercial Company, and at present I am stationed on St. George Island, of the Pribilof group, Alaska; I have been in Alaskan waters every year but two since I was 14 years of age. I first went to Bering Sea in 1845, on a whaling voyage, and annually visited these waters in that pursuit until 1868, at which time the purchase and transfer of Alaska was made to the United States; since that time I have been engaged in taking of fur seals for their skins. In 1870 I entered the employ of the lessees of the Pribilof Islands, and have been so engaged ever since, and for the last thirteen years have been the company's local agent on St. George Island, and during the sealing season have, a part of the time, gone to St. Paul Island and took charge of the killing at Northeast Point, which is known to be the largest fur-seal rookery in the world. For ten years prior to 1878 I resided most of the time at Northeast Point, having landed and taken seals there in 1868. I have had twenty-four years' experience in the fur-seal industry as it exists in the waters of the North Pacific and Bering Sea, and have made a very careful study of the habits and conditions of this useful animal. During this period it has been my duty as a trusted employee of the lessees to observe and report, each year, the condition of the rookeries. My instructions were explicit and emphatic to never permit, under any circumstances, any practices to obtain that would result in injury to the herds. These instructions have been faithfully carried out by myself and other employees of the lessees of the Islands, and the laws and regulations governing the perpetuation of seal life have been rigidly enforced by all the Government agents in charge of the islands.

In my twenty-three years' experience as a whaler in Bering Sea and the North Pacific, during which time I visited every part of the coast surrounding these waters, and my subsequent twenty-four years' experience on the seal islands in Bering and Okhotsk seas, I have never known or heard of any place where the Alaskan fur seals breed except on the Pribilof group in Bering Sea. These islands are isolated and seem to possess the necessary climatic conditions to make them the favorite breeding grounds of the Alaskan fur seals, and it is here they congregate during the summer months of each year to bring forth and rear their young. Leaving the islands late in the fall or in early winter, on account of the inclemency of the weather, they journey southward through the passes of the Aleutian Archipelago to the coast of California, Oregon, and Washington, and, gradually working their way back to Bering Sea, they again come up on the rookeries soon after the ice disappears from the shores of the islands; and my observation leads me to believe that they select, as near as possible, the places they occupied the year before. The young seals are born on the breeding rookeries in June and July. The head constitutes the greater part of this animal at this time, and they are clumsy and awkward in all their movements, and if swept into the water by accident or otherwise would perish from inability to swim—a fact that I have often observed, and one which is well known to all who have paid any attention to the subject. Practically, they remain in this helpless condition, though taking on fat rapidly, until they are from 6 to 7 weeks old, when they commence to go into

shallow water, and, after repeated trials, learn to swim; but even then they spend most of their time on land until they leave the islands late in November. During the first few weeks after their birth they are not amphibious, and land is a necessity to their existence. The mother seals go out to sea to feed soon after giving birth to their young, and return at intervals of from a few hours to several days to suckle and nourish their young.

The mother seal readily distinguishes her own offspring from that of others, nor will she permit the young of any other seal to suckle her. I have noticed in the killing of young seals (pups) for food in November that their stomachs were full of milk, although, apparently, the mothers had not been on the islands for several days previous. I have observed that the male seals taken in the forepart of the season, or within a few days after their arrival at the islands, are fat and their stomachs contain quantities of undigested fish (mostly cod), while the stomachs of these killed in the latter part of the season are empty; and they diminish in flesh until they leave the islands late in the season.

I am of the opinion that while the female often goes long distances to feed while giving nourishment to her young, the male seals of 2 years old and over seldom, if ever, leave the islands for that purpose until they start on their migration southward. When the seals are on the breeding grounds they are not easily frightened unless they are too nearly approached, and even then they will go but a short distance if the cause of their fright becomes stationary.

It is impossible to estimate with any sort of accuracy the number of seals on the Pribilof Islands, because of the seals being constantly in motion, and because the breeding grounds are so covered with broken rocks of all sizes that the density varies. I think all estimates heretofore made are unreliable, and in the case of Elliott and others who have endeavored to make a census of seal life, the numbers are, in my opinion, exaggerated. Measurements of the breeding grounds, however, show an increase or decrease of the number of seals, because the harems are always crowded together as closely as the nature of the ground and temper of the old bulls will permit. My observation has been that there was an expansion of the rookeries from 1870 up to at least 1879, which fact I attribute to the careful management of the islands by the United States Government. In the year 1880 I thought I began to notice a falling off from the number of seals on Northeast Point rookery, but this decrease was so very slight that probably it would not have been observed by one less familiar with seal life and its conditions than I; but I could not discover or learn that it showed itself on any of the other rookeries. In 1884 and 1885 I noticed a decrease, and it became so marked in 1886 that everyone on the islands saw it. This marked decrease in 1886 showed itself on all the rookeries on both islands.

Until 1887 or 1888, however, the decrease was not felt in obtaining skins, at which time the standard was lowered from 6 and 7 pounds to 5 and 4½ pounds. The hauling grounds of Northeast Point kept up the standard longer than the other rookeries, because, as I believe, the latter rookeries had felt the drain of open-sea sealing during 1885 and 1886 more than Northeast Point, the cows from the other rookeries having gone to the southward to feed, where the majority of the sealing schooners were engaged in taking seal. There was never while I have been upon the island any scarcity of vigorous bulls, there always being a sufficient number to fertilize all the cows coming to the islands. It was always borne in mind by those on the islands that a sufficient number of males must be preserved for breeding purposes, and this accounts

partly for the lowering of the standard weight of skins in 1888. The season of 1891 showed that male seals had certainly been in sufficient number the year before, because the pups on the rookeries were as many as should be for the number of cows landing, the ratio being the same as in former years. Then, too, there was a surplus of vigorous bulls in 1891 who could obtain no cows. Every care is taken in driving the seals from the hauling to the killing grounds, and during the regular killing season of June and July there are no females driven, because at this season they are on the breeding rookeries and do not intermingle with the young males. If occasionally one does happen to be in the drive great care is taken not to injure her; the law prohibiting the killing of the female seal is well understood by the natives, and they are thoroughly in sympathy with it. Even were I to request them to kill a female seal they would refuse to do it, and would immediately report me to the Government agent. I have known an occasional one to be killed by accident during the food drives late in the season, when the males and females intermingle on the hauling grounds, but the clubber was always severely rebuked by the chief for his carelessness, as well as by the Government and company officers.

My observation is that the number of female seals killed on the islands from all causes is too insignificantly small to be noticed. The longest drives made on St. George Island are from Starry Arteel and Great Eastern rookeries, and they are less than 3 miles long. Drives from these rookeries require from four to six hours, according to the weather. At Zapadnie rookery, on St. George, the drive to the killing grounds is less than a mile, the seals are now being killed there instead of being driven across the island as they were prior to 1878, when it took three days to make the journey. There is now a salt house at Zapadnie, at which the skins are salted as soon as taken. The killing grounds on both islands are all situated within a very short distance from the shore, and seals not suitable to be killed, or that are turned out for any cause, immediately go into the water, and, after sporting around for an hour or two, they return to the hauling grounds, and to all appearances they are as unconcerned and careless of the presence of man as they were before they were driven to the killing grounds. I have often observed that the seals when on the islands do not take fright easily at the presence of man; and the natives go among them with impunity. They will go into a herd of seals on the hauling grounds and quietly separate them into as many divisions and subdivisions as is necessary before driving them to the killing grounds. At the killing grounds they are again divided into bunches or "pods" of 20 or 30 each more readily than the same number of domestic animals could be handled under the same circumstances.

The bulls on the rookeries will not only stand their ground against the approach of man, but will become the aggressors if disturbed. Pups are tame and very playful when young, and previous to 1891, when it was the practice to kill 3,000 or 4,000 for natives' food in November, thousands of them were picked up and handled to determine sex, for only the males were allowed to be killed. Hair seal and seal lions haul out on the islands and are seldom disturbed, yet they will plunge into the water at once should they discover anyone upon their rookeries. But it is not so with the fur seal. They seem at home on the rookeries and hauling grounds, and they show a degree of domestication seldom found among similar animals. At Northeast Point rookery, on St. Paul Island, the longest drive is 2 miles. In former times the Russians used to drive from this rookery to St. Paul village, a distance

of 12½ miles. Seals turned away from the killing grounds return to the rookery from which they were driven; therefore a male seal is not redriven day after day, because a hauling ground is always given several days' rest before being driven from again. I never saw or heard of the generative organs of a male seal being injured by driving or by redriving, and if such a thing had taken place, even in exceptional cases, the natives would have noticed and reported it, which they never did. I have seen a seal's flippers made sore by driving, but I never saw one that was seriously injured by driving. I do not believe that a male seal's powers of reproduction were ever affected by driving or redriving.

The bulls maintain their positions on the rookeries from the time they arrive till the cows come by most bloody battles, and after the cows commence arriving they are continually contending for their possessions. During these conflicts they are often seriously wounded, and their exertions are far more violent than any effort made by a young male during a drive. Then, too, the male seal must have great vitality to remain on the rookeries for three months without eating or drinking and with little sleep. In spite of this drain on his vital force he is able to fertilize all the cows which he can get possession of, and a barren cow is a rarity. I believe that a bull can serve one hundred or more cows, and it is an absurdity to think that an animal possessing such remarkable vigor could be made impotent by being driven or redriven when a bachelor. An impotent bull would have neither the inclination or vigor to maintain himself on the rookeries against the fierce and vigorous possessors of harems. The only bulls hauling up away from the breeding rookeries are those whose extreme old age and long service have made them impotent and useless, and I have never seen or heard tell of anything that would make an exception to this rule. The methods employed in taking the skins are, in my opinion, the best that can be adopted. The killing grounds are situated as near the rookeries and hauling grounds as is possible without having the breeders or bachelors disturbed by the smell of blood or putrefaction, and most stringent regulations have always been enforced to prevent disturbing or frightening the breeding seals.

I am convinced that if open-sea sealing had never been indulged in to the extent it has since 1885, or perhaps a year or two earlier, 100,000 male skins could have been taken annually forever from the Pribilof Islands without decreasing the seal herd below its normal size and condition. The cause of the decrease which has taken place can be accounted for only by open sea sealing; for, until that means of destruction to seal life grew to be of such proportions as to alarm those interested in the seals, the seal herd increased, and since that time the decrease of the number of seals has been proportionate to the increase in the number of those engaged in open-sea sealing. The majority of seals killed in the water are females, and all the females killed in Bering Sea are mothers who have left their pups on the rookeries and gone some distance from the islands in search of food. The death of every such mother seal at sea means the death of her pup on shore, because it is absolutely and entirely dependent on her for its daily sustenance. I never heard of any disease among the seal herd, nor of an epidemic of any sort or at any time in the history of the islands. I do not remember the precise date of the first successful raid upon the rookeries by sealing schooners, but I do know that for the past ten years there have been many such raids attempted, and a few of them successfully carried out, and that as the number of schooners increased around the

islands, the attempted raids increased in proportion, and it has been deemed necessary to keep armed guards near the rookeries to repel such attacks. Although a few of the raids were successful, and a few hundred seals killed and carried off from time to time during the past ten years, the aggregate of all the seals thus destroyed is too small to be mentioned when considering the cause of the sudden decline of seal life on the Pribilof Islands.

Twenty-four years of my life have been devoted to the sealing industry in all of its details as it is pursued upon the Pribilof Islands, and it is but natural that I should become deeply interested in the subject of the seal life. My experience has been practical rather than theoretical. I have seen the herds grow and multiply under careful management until their numbers were millions, as was the case in 1880. From 1884 to 1891 I saw their numbers decline, under the same careful management, until in the latter year there was not more than one-fourth of their numbers coming to the islands. In my judgment there is but one cause for that decline and the present condition of the rookeries, and that is the shotgun and the rifle of the pelagic hunter, and it is my opinion that if the lessees had not taken a seal on the islands for the last ten years we would still find the breeding grounds in about the same condition as they are to-day, so destructive to seal life are the methods adopted by these hunters. I believe the number they secure is small, as compared with the number they destroy. Were it males only that they killed the damage would be temporary, but it is mostly females that they kill in the open waters, and it is plain to anyone familiar with this animal that extermination must soon follow unless some restrictive measures are adopted without delay.

The foregoing is substantially the same statement that I made to the commissioners who visited the islands in 1891.

DANIEL WEBSTER.

PELAGIC SEALING AND PRIBILOF ROOKERIES.

Deposition of Washington C. Coulson, United States Revenue Marine, in command of the Rush.

STATE OF CALIFORNIA,
City and County of San Francisco, ss:

Washington C. Coulson, having been duly sworn, deposes and says: I am captain in the United States Revenue Cutter Service. At present I am in command of the United States revenue cutter *Rush*. I was attached to the United States revenue cutter *Lincoln*, under the command of Capt. C. M. Scammon, during the year 1870, from June until the close of the year as a third lieutenant, and have been an officer in the revenue service ever since. In the month of that year that I was in the Bering Sea and at the seal islands of St. Paul and St. George. I went on shore at both islands and observed the seals and seal life, the method of killing, etc. I noticed particularly the great number of seal, which were estimated by those competent to judge that at least 5,000,000 and possibly 6,000,000, were in sight on the different rookeries. To me it seemed as though the hillside and hauling grounds were literally alive, so great was the number of seals. At St. George Island, though the seals were never in as great numbers nor were there so many hauling places, the seals were very plentiful. At this time and for several year thereafter pelagic sealing did not take place to any extent and the

animals were not diverted from their usual paths of travel. All fire arms were forbidden and never have been used on these islands in the killing and taking of seals. In fact, unusual noise even on the ships at anchor near these islands is avoided.

Visiting the rookeries is not permitted only on certain conditions, and anything that might frighten the seals avoided. The seals are never killed in or near the rookeries, but are driven a short distance inland, to grounds especially set apart for this work. I do not see how it is possible to conduct the sealing process with greater care or judgment. Under the direction of Mr. Redpath, on St. Paul, and Mr. Webster, on St. George islands—men who have superintended this work for many years—the natives do the driving, and the killing is performed under the supervision of the Government agents. The natives understand just how much fatigue can be endured by the seals, and the kind of weather suitable for driving and killing; no greater precaution in that regard can be taken. The evidence of this is in the small percentage of animals injured or overheated in these drives. I do not believe the animals are much frightened or disturbed by the process of selecting the drives from the rookeries, nor do I think it has a tendency to scare the animals away from the islands.

During the seasons of 1890 and 1891 I was in command of the revenue cutter *Rush* in Bering Sea and cruised extensively in those waters around the seal islands and the Aleutian group. In the season of 1890 I visited the islands of St. Paul and St. George in the months of July, August, and September, and had ample and frequent opportunities of observing the seal life as compared with 1870. I was astonished at the reduced numbers of seals and the extent of bare ground on the rookeries in 1890 as compared with that of 1870, and which in that year was alive with seal life. In 1890 the North American Commercial Company were unable to kill seals of suitable size to make their quota of 60,000 allowed by their lease, and, in my opinion, had they been permitted to take 50,000 in 1891, they could not have secured that number if they had killed every bachelor seal with a merchantable skin on both islands, so great was the diminution in the number of animals found there.

I arrived with my command at St. Paul Island June 7, 1891; at that date very few seals had arrived and but a small number had been killed for fresh food. On the 12th of June, 1891, we were at St. George Island and found a few seals had been taken there, also for food, the number of seals arriving not being enough to warrant the killing of any great number. During that year I was at and around both these islands every month from and including June until the 1st day of December (excepting October), and at no time were there as many seals in sight as in 1890. I assert this from actual observation, and it is my opinion we will find less this year; and should pelagic sealing in the North Pacific and Bering Sea continue, it is only a question of a very few years when seal in these seas, and especially at the seal islands, will be a thing of the past, for they are being rapidly destroyed by the killing of females in the open sea.

As to the percentage of seals lost in pelagic sealing where the use of firearms is employed, I am not able to state of my own observation, but from conversations with those engaged in the business I am of the opinion that the number secured is small compared with those lost in attempts to secure them. No mention was ever made of any unusual number of dead pups upon the rookeries having been noticed at any time prior to my visit in 1870, but when I again visited the islands in 1890 I found it a subject of much solicitude by those interested in the

perpetuation, and in 1891 it had assumed such proportions as to cause serious alarm. The natives making the drives first discovered this trouble, then special agents took note, and later on I think almost everyone who was allowed to visit the rookeries could not close their eyes or nostrils to the great numbers of dead pups to be seen on all sides. In company with Special Agent Murray, Captain Hooper, and Engineer Brerton, of the *Corwin*, I visited the Reef and Garbotch rookeries, St. Paul Island, in August, 1891, and saw one of the most pitiable sights that I have ever witnessed. Thousands of dead and dying pups were scattered over the rookeries, while the shores were lined with emaciated, hungry little fellows, with their eyes turned toward the sea uttering plaintive cries for their mothers, which were destined never to return. Numbers of them were opened, their stomachs examined, and the fact revealed that starvation was the cause of death, no organic disease being apparent.

The greatest number of seals taken by hunters in 1891 was to the westward and northwestward of St. Paul Island, and the largest number of dead pups were found that year in rookeries situated on the western side of the island. This fact alone goes a great way, in my opinion, to confirm the theory that the loss of the mothers was the cause of mortality among the young.

After the mother seals have given birth to their young on the islands they go to the water to feed and bathe, and I have observed them not only around the islands, but from 80 to 100 miles out at sea.

In different years the feeding grounds or the location where the greater number of seals are taken by poachers seem to differ; in other words, the seals frequently change feeding grounds. For instance, in 1887, the greatest number of seals were taken by poachers between Unamak, Akutan Passes, and the seal islands, and to the southwestward and eastward, in many cases from 50 to 150 miles distant from the seal islands. In the season of 1890 to the southward and westward, also to northwest and northeast of the islands, showing that the seals had been scattered. The season of 1891 the greatest number were taken to northward or westward of St. Paul, and at various distances, from 25 to 150 miles away.

On my cruise to St. Matthews and Unamak Island we did not discover any seal within 25 or 30 miles of those islands, nor do I know of or believe that the seals haul out upon land in any of the American waters of Bering Sea except at the Pribilof Islands. If the seal life is to be preserved for commercial purposes the seals must be protected, not only in the Bering Sea, but in the waters along the Pacific Coast from the Aleutian Passes to the Columbia River.

WASH. C. COULSON,
Captain, United States Revenue Marine.

Deposition of Thomas F. Morgan, agent of lessees of Pribilof and Commander islands.

STATE OF CONNECTICUT,
New London County, ss:

Thomas F. Morgan, being duly sworn, deposes and says: I am the person described in and who verified two certain affidavits on the 5th day of April, 1892, before Sevellon A. Brown, notary public, in relation to the habits, *management, etc.*, of the fur seals..

The harems on the Pribilof Islands have at all times varied very much in size. In the years when I was on the islands, between 1874 and 1887, it was always possible to find individual harems with 50 or perhaps 80 females, while others would only have 4 or 5 females, notwithstanding the average harem would perhaps contain from 15 to 30 females. Large harems, though in smaller numbers, continued to exist even in the years 1885 and 1887, when, as I have already stated in a former affidavit, the number of females began to decrease.

While I was on the islands there was no such thing known as disturbing breeders or stampeding the rookeries. The herd is driven from the rookery, is kept away from filth as much as possible, for the reason that the skins which are taken, if clean, take salt better, cure in better condition, and bring better prices. Filth, grease, and oil make skins come out of kench flat, and such skins are classed as low when sold. Mud spoils the salt for quick work, so the cleaner the skins are, the better. As the rejected seals are only to be got away from the killing ground, the quickest way to the sea is the route chosen, and they often pass over decaying carcasses, but not of necessity, as they are allowed to choose their own gait and route to the sea. They do not seem to object to this any more than to the filth caused by the excrement and decaying placentas on the breeding grounds.

I was on the Commander Islands in 1891 as agent of the Russian Seal Skin Company. I never heard anyone state that barren females (I mean females without young) were noticed there, and I don't believe that any person whose opinion would be entitled to consideration noticed this fact. It soon would have become a matter of common knowledge on the islands if there had been any number of adult females without young. The only sure way to determine whether an adult female is barren is to examine her as to whether she is giving milk or is dry. As the young seals do not follow the mother continuously, the fact of seeing females without pups with them does not prove that they have not pups somewhere on the breeding grounds, and no person having any knowledge of rookery life could draw such an inference, and claim that the females were therefore barren.

While on the Pribilof Islands I don't know that I ever saw a sterile female seal. It is impossible to recognize the same seal from year to year unless, as in the case of a few old bulls which have large scars, a torn lip, a white blind eye, the nose split, or some unnatural mark. And, although I have seen old females without milk, very fat, associating with the young males, I could not say that they had not been fertilized, and, not having an offspring to care for, were associating with the males until the season arrived for the herd to leave. At one time the suggestion was made that it would be a good plan to kill these females. I denied that it was possible for anyone to know that they would not bear young, and that if the killing of one female was authorized it would open the way to do great injury to the herd. For, when it became desirable to market a large number of skins, the clubber would see large numbers of females unfit for breeding.

It is difficult to discover fresh excrement on the rookeries, for the seals' flippers soon wipe out the evidence looked for. Still I have often seen it. In color it is orange, light yellow to almost colorless, and in consistency soft, almost liquid. At times it is very offensive, and at others nearly odorless. But the soil of the breeding ground is impregnated with it, which gives to the rookery a most disagreeable odor that is increased by the decaying placentas.

I am quoted by the British commissioners (section 825 of their report)

to show that in 1884 an irregularity in the habits of the seals took place at the Pribilof Islands. This irregularity consisted in the following: In previous years the seals that arrived in June furnished nearly all 8-pound skins and over; very few of these seals were let go or rejected, and when any were rejected it was principally because they were too large. But this year the 2-year-old seals commenced to land much earlier, and the run of large half bulls arrived in more scattered bunches, just as if the herd had been turned back in places and hurried ahead in others, thus hurrying the smaller seals, so that they came on with the head of the flock, and turning back some of the large seals which formerly had arrived later. No irregularity was observed in the habits of the female seals.

THOMAS F. MORGAN.

Deposition of James G. Swan, former inspector of customs, employee of Indian Bureau and of Fish Commission of United States.

STATE OF WASHINGTON,
Jefferson County, ss:

James G. Swan, having been duly sworn, deposes and says: I am 74 years old, a resident of Port Townsend, Wash., and by occupation a lawyer. I am also United States commissioner, Hawaiian consul, commissioner for the State of Oregon, and a notary public. I came to the Pacific Coast in 1850 and to Port Townsend in 1859, where I have since held my residence the greater part of the time to the present date. From 1862 to 1866 I was employed in the Indian Bureau of the Interior Department and stationed at Neah Bay, and again from 1878 to 1881 I was inspector of customs at the same place. In 1883 I also visited there in the employ of the Fish Commissioner.

In 1880, at the request of the late Professor Baird, of the Smithsonian Institute at Washington, I made a careful study of the habits of the fur seal (*Callorhinus ursinus*) found in the vicinity of Cape Flattery and the Strait of Juan de Fuca, and the result of my observation is embodied in the Tenth United States Census (report of United States Fish and Fisheries, sec. 5, vol. 2, p. 293. Fur seal of Cape Flattery and Vicinity) and in the report of the United States Fish Commission. (Bulletin United States Fish Commission, vol. 3, pp. 201–207.)

The observations upon which these reports are based were mostly confined to the immediate vicinity of Cape Flattery, and I had at that time no opportunity for extended inquiry as to the pelagic habits of the animals. The natural history of the seal herd of the Pribilof Islands, when upon or in the immediate vicinity of the land, had been minutely, and, I have no doubt, accurately, described by H. W. Elliott in his monograph published in 1875. There had been up to that date no series of observations nor good evidence on which to base the hypothesis that the Pribilof herd and the large mass of seals annually seen on the latitude of Cape Flattery were identical. On the contrary, there seemed then to be many evidences that some other rookeries than those of the Pribilof Islands were located at some point on the Oregon, Washington, or British Columbia coast. Young seals were occasionally found by the Indians upon or near the beaches, and pregnant females were often captured by them so heavy with pup, and apparently so near their full term of pregnancy, as to warrant the belief that the young must be either born in the water upon bunches of kelp or upon the rocks and beaches on or near the coast. Young seals were often brought to the

Indian villages, and the testimony of both Indian and white hunters at that time pointed strongly to the conclusion that the breeding grounds of the animals with which we were familiar could not be far distant. I have myself seen the black pups in the water when they appeared to be but a few weeks old, and others have assured me that a considerable number were found from time to time swimming with their mothers. This phenomenon being of constant occurrence year after year, and in the absence of a wider range of observations, we were naturally confirmed by them in the conclusion to which I have above referred.

In recent years it has been demonstrated by the large catches obtained off the coast by pelagic hunters, and by the testimony of a great number of people whose attention has been directed to the matter, that the herd of seals, of which we saw only a very limited proportion from the Neah Bay station, is a very large one; and it now seems beyond a doubt that the comparatively few authentic cases in which pups were seen upon or in the vicinity of the coast were anomalous, for it is reasonable to suppose that in so large a mass of pregnant females an occasional one would be prematurely overtaken by the pains of the parturition, and that the offspring brought forth under favorable conditions, as upon a bunch of kelp or some rock, should survive at least a few days and be brought in and kept by the Indians, as I have occasionally seen them. I have also seen at the villages late in the season, in the hands of the Indian boys, live pups which had been recently removed from their speared mothers, and whose vitality was such that they continued to live for several days; but it is a well-known fact that young mammalia may be born several days, or possibly even a month or two, before full term and still survive. It is possible, too, that as a source of error the hunters may have mistaken gray pups whose coats had been darkened by wetting, or those a few months old, born the preceding summer, for the so-called black pups.

At the Neah Bay station large bull seals are seldom seen, and the major part of those killed are pregnant females, having in them small fetuses early in the season—say about January or February—and later full-grown young. From all the evidence I am able to gather, I believe the different classes of seals remain apart when upon the British Columbia coast, and old bulls and immature young males being chiefly found at a considerable distance from the land, while the pregnant females and young males travel close along the shore, and are frequently seen in limited numbers in the straits and inlets.

In the light of investigation and research had since the date of my observations, the most of which were made more than ten years ago, I am satisfied that the mass of the herd from which the British Columbia or Victoria catch is obtained are born neither in the water nor upon the land in the vicinity where they are caught, and it appears most probable from the routes upon which they are followed and the location in which they are found by pelagic hunters between March and August that they originate in, migrate from, and annually return to Bering Sea.

It has been stated in print that I said I had seen pups born on the kelp in the water. This is a gross misrepresentation. I merely said that it had been reported to me that such birth had been witnessed, and quoted as my authority Capt. E. H. McAlmond, of the schooner *Champion* (p. 203, vol. 1, of United States Fish Commission's report).

Pelagic sealing was carried on by the Indians at Neah Bay long before I first went among them, but they were then, and until within a few years, provided only with their canoes, spears, and other native *implements, constituting* the necessary outfit for an aboriginal seal

hunter. The destruction wrought by them upon the seal herd was, compared with the vast number of which it was composed, very slight, and did little harm to anyone, while the result to the Indians was then and is still of great importance. Now pelagic seal hunting is carried on in quite a different manner. Numerous expeditions are fitted out in well-equipped vessels, some of them under both steam and sail, manned by whites and Indians, and armed with guns and spears. I am informed and believe that the herd has greatly decreased within the last two or three years, and that if pelagic sealing is not soon checked the herd will be driven hither and thither and so decimated as to render it commercially valueless. This would be a great wrong to the Indians, who are dependent to a great measure upon the seals for a livelihood, as well as needless, wanton waste, which civilized nations ought not to permit. It can not be denied that the natives, who have utilized the seal fisheries adjacent to their settlements from their earliest history and profited by them, deserve some consideration. I believe that in order to preserve the rookeries upon the islands and build them up to their former productiveness it is only necessary to restrict pelagic sealing to the coast south of 54° 40′ and confine it to the use of the primitive methods formerly employed by the natives.

JAMES G. SWAN.

Deposition of Joseph Stanley-Brown, Treasury agent.

DISTRICT OF COLUMBIA,
City of Washington, ss:

Joseph Stanley-Brown, being duly sworn, deposes and says: I am 37 years of age; am a citizen of the United States; reside at Mentor, Ohio, and am by profession a geologist.

I spent the entire season of 1891 upon the Pribilof Islands, and during the summer of 1892 again visited them and spent the period between June 9 and August 14 upon the islands of St. Paul and St. George in continuation of my investigations concerning seal life. This season, in addition to the continuous general examination of all the rookeries and the plottings of the breeding-ground areas upon charts, certain special stations were selected at points within easy reach of the village and daily visits made thereto. This method of work gave me an excellent opportunity to make comparisons between the breeding areas of 1891 and those of 1892.

As the result of my observations during the past season, it is my opinion that there was no increase among the females—the producing class—but on the contrary that there was a perceptible falling off. This decrease was the more noticeable at points on the rookeries where the smaller groups of breeding seals are to be found.

There was so little driving during the season of 1892 that an excellent opportunity was given to observe life upon the hauling grounds, several of which were not disturbed during the entire season. There seemed to be a slight increase of the young bachelor seals, although this may have been more apparent than real from the fact that being unmolested they accumulated in large bands.

It is quite certain that the normal habit of the holluschickie is to remain most of their time upon shore, and if left to themselves would spend more time there than in the water. I have kept a close daily watch upon groups of young males, the members of which did not go into the water *for a week or ten days* at a time.

Any statement to the effect that the occasional occurrence of large harems indicates a decrease in the available number of virile males, and hence deterioration of the rookeries, should be received with great caution if not entirely ignored. The bulls play only a secondary part in the formation of harems. It is the cow which takes the initiative. She is in the water beyond the reach or control of the male and can select her own point of landing. Her manner on coming ashore is readily distinguished from that of the young males which continuously play along the sea margin of the breeding grounds. She comes out of the water, carefully noses or smells the rocks here or there like a dog, and then makes her way to the bull of her own selecting. In this incipient stage of her career on shore there is but little interference on the part of the male, but once well away from the water and near the bull she has chosen, he approaches her, manifests his pleasure, and greetings are exchanged. She then joins the other cows and as soon as dry lies down and goes comfortably to sleep. I have seen this selective power exercised repeatedly, and the result is that one bull will be especially favored while those within 15 or 20 feet will be ignored.

The size of the harems, therefore, has of itself but little to do with the question of lack of virile males, but indicates only the selective power of the females. If 100 bulls represented the necessary supply of virile males we might, by reason of this fact, find 10 bulls with very large harems, 10 with still less, 50 with a reasonable number, 20 with a few, and 10 with none. An onlooker would not, therefore, be justified in stating that by reason of these few large harems there is a lack of virile males.

In the very nature of things it seems impossible that any method other than this one of selection on the part of the female could ever have existed.

Large harems are frequently due to topographic conditions, the configuration of the land being such that the females can only reach the breeding grounds through narrow passageways between the rocks, and around the terminations of which they collect.

Harems often coalesce; then boundaries become indefinite, and when their size and position make them too large for control, cows pass to the rear and are appropriated by the bulls there.

When once the female is located, the bull exercises rigid control and permits no leaving of the lands until she has been served. I never saw a harem so large that the vigilance of the bull in this respect was ever relaxed. His consorts may escape to another harem, but they are never permitted to go to sea until an inspection convinces the bull that they are entitled to do so. No intelligent observer would be so bold as to assert that during the season of 1892 there was not an abundance of males of complete virility, despite the occurrence of occasional large harems. The accompanying photographs[1] show that even at the height of the season, and just previous to the disintegration of the breeding grounds, there were unsupplied with cows old males which had taken their stand and from which I was unable to drive them with stones.

I should have been extremely glad to have been able to note a great many more of these large harems, but the work of the pelagic hunter among the females has been so effective that the average size of the harems is growing smaller and smaller, while the number of the idle bulls is steadily increasing. The rookeries of the Pribilof Islands will never be destroyed by superabundance of large harems.

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[1] Not furnished.

I arrived on the islands this year a few days after the coming of the first cows, and by selecting a small harem composed of seals, the arrival of which I have seen, and giving it daily observation, I was able to satisfy myself that females begin to go into the water from fourteen to seventeen days after first landing. On first entering the sea they make a straight line for the outer waters, and as far as the eye can follow them they seem still to be traveling. The first cows to arrive are the first to depart in search of food, and by the first week in July the cows are coming and going with such frequency as to be readily seen at any time. The accompanying photograph[1] (taken on July 8, 1892, from the same position but one day earlier than the one of last year which faces page 13 of volume 2, of the case) shows pups, the mothers of which are at sea.

The fact that the coat of the cow assumes from residence on the shore a rusty or sunburned aspect gives a ready means of observing her movements. The rustiness is quickly lost by life in the sea.

The movements of females can also to a certain extent be well observed by their appearance after giving birth to their pups—after fasting and after gorging themselves with food. After the birth of the pup, and after remaining upon the rookeries even for a few days when the period of coming from and going into the water has been entered upon, the mother has a very decidedly gaunt appearance, in strong contrast to the plumpness of pregnancy or full feeding. After feeding at sea they come ashore again well rounded up. So marked is this that I have been repeatedly misled by mothers in such a condition, mistaking them for pregnant cows, and have discovered my error by seeing her call her pup and suckle it. If I had any doubt in my mind as to cows feeding at sea it was dispelled by an examination of three cows I shot at Northeast Point on July 25, 1892. Two "sunburnt" cows were first killed, and their stomachs were found to be empty. Another was shot just as she came ashore and her stomach was gorged with half-digested codfish, which was identified by Mr. Townsend, an expert of the United States Fish Commission. A dissection was made of this seal, and the udder—which extends, as a broad, thick sheet, thinning out toward the edges, over the entire abdominal portion of the cow and well up to the fore flippers—was so charged with milk that on removing the skin the milk freely flowed out in all directions, and previous to skinning it was possible with but little effort to extract a sufficient amount to enable me to determine its taste and consistency. A large supply of food is necessary to furnish such an abundant amount of milk. I have no doubt that a well-developed mother seal could yield between a pint and a quart of milk in the first twenty-four hours after landing from a feeding expedition, and with such rich fountains to draw upon it is no wonder that the voracious pups increase during their residence upon the island not less than four times their weight at birth. And it is equally certain that without such a constant supply of nourishment they could not make such a rapid growth as they do.

The presence of excrementitious matter upon the breeding rookeries is recognized both by sight and smell. It is of a yellowish color, and though much of it is excreted, it is of such a liquid consistency that it is quickly rubbed into and mingled with the soil, and thereafter its existence can only be noticed through the discoloration of the soil and the offensive odor. The latter is readily detected at a distance of miles, when the wind is completely impregnated with it. The odor bears no

[1] *Not furnished.*

resemblance to that which arises from the bodies of a large number of assembled animals.

The quantity of excrementitious matter present is influenced by the nature of their diet, which, being fish, is largely assimilated, while in their coming and going much of it may be deposited in the water, to say nothing of drenching from rain, to which the rookeries (many of which are solid rock) are subjected.

On the hauling grounds, on the other hand, it is almost impossible to detect such matter, either through its presence, the appearance of the soil, or its odor. This is a well-known fact to anyone who has even casually inspected such hauling grounds as Middle Hill, parts of Zapadnie, western end of English Bay, western end of North Rookery, Starry Arteel, Great East Rookery, and others.

This difference between the breeding grounds and the true hauling grounds is explained by the fact that the former are occupied by nursing females, which are constantly feeding, while the latter are frequented chiefly by young males, which take but little food during the summer. This abstention from food on their part is further indicated by the fact that, with exceptions now and then observed on the killing grounds, they grow thinner and thinner as the season advances.

The pup at birth is received by the mother with an affectionate regard that is unmistakable; a sound not unlike that made by an ewe, but not so loud, can be heard, and care is exercised by the mother for the pup's protection. I have repeatedly seen a mother, when her offspring was still so young as to be helpless, remove it beyond the reach of the surf, or gently lift it from a hole between the bowlders into which it had fallen. I have seen them often place the udder in the most available position for the pup to suck, and move themselves sufficiently close for it to be within easy reach. After an absence in the sea, the mother invariably calls to her young repeatedly, and manifests pleasure on finding it. Later on the pup is able to recognize its mother, and as the female will suckle only her own pup the pleasure and contentment which the meeting gives both is evident to the most careless observer.

Dead pups were as conspicuous in their infrequency in 1892 as by their numerousness in 1891. In no instance was there to be noted an unusual number of dead pups, except on the breeding grounds of Tolstoi, the position, character, and size of which gave prominence to the carcasses. Here the mortality, while in no way approaching that of the previous season, was still beyond the normal, as indicated by the deaths upon the other breeding grounds.

Any surreptitious killing of the mothers can not be charged with it, for such killing either there or anywhere else on the island would have become the gossip of the village and readily detected by the attempt to dispose of the skins. There are no hauling grounds so close to the breeding areas that the driving of the young males could cause consternation among the females during the breeding season. Stampedes or disturbances can not account for it, for not only are the breeding grounds in this particular case of Tolstoi one-fourth of a mile away from the hauling grounds, namely, at Middle Hill (the nearest point to that breeding ground from which seals were driven in 1891 and 1892), but it would be practically impossible to stampede this breeding ground by any disturbing cause save of such magnitude as to be the subject of common knowledge on the islands, and I know that no cause for such a commotion occurred.

Seals will stand a large amount of annoyance before leaving their harems, or, indeed, being permitted to do so by the bulls, and the man

does not live who can stampede rookery bulls. No smoke of vessels or presence of ships ever cause the stampede of an entire breeding ground. Such things have been reported but no one has ever seen it, and it would require persistent effort to accomplish such a result. I have had cause to send natives on several occasions entirely across a rookery, and no stampede ensued. I have thrown eggshells filled with blue paint at female seals, for the purpose of marking them, until rocks and seals were a mass of blue color, but with no disturbing effect. In the prosecution of my investigations I have shot females with a noiseless rifle upon a small detached breeding ground, have crawled in and dragged out the seals killed without causing the other mothers to recede more than 20 feet, and in fifteen minutes thereafter the breeding grounds presented their wonted appearance.

After two seasons' observation I unhesitatingly state that I do not believe there has ever been breeding grounds stampeded in such a wholesale manner as to cause the death of pups. If such occurred in 1891 and 1892 it is certainly extraordinary that only the starvelings met death.

The true explanation of the deaths upon Tolstoi this year is not readily found, and must be sought in local causes other than those indicated above, and I am confident that to none of those causes can be justly attributed the dead pups of 1891 and 1892. The following explanation, based upon my acquaintance with the facts, is offered in a tentative way:

A glance at the map will show that the location and topographic character of this rookery have no counterpart elsewhere on the island. The rookeries upon which deaths are infrequent are those which are narrow and upon the rear of which are precipitous bluffs that prevent the wandering of pups backward. The larger part of Tolstoi, as will be seen from the map, extends far back and has great lateral dimensions. Much of it is composed of drifting sands and it has rather a steep inclination down to the sea. The shore is an open one, and the surf, either gentle or violent, is almost constantly present. As the time for learning to swim approaches the pups find it easy to come down the incline. They congregate in large numbers upon the sandy shore and begin their swimming lessons. This is at a period when they are still immature and not very strong. The buffeting of the waves exhausts them and coming ashore they either wander off, or struggling a certain distance up the incline, made more difficult of ascent by the loose sand of which it is composed, lie down to rest and sleep, and are overlooked by their mothers returning from the sea. I have seen mother seals go up the entire incline seeking their pups.

I find nothing in the history of dead pups upon the island this year which does not confirm my belief that the great mortality of the season of 1891 was due to pelagic sealing in Bering Sea. Had it not been so, there is no reason why the deaths in 1892 should not have been as widely distributed as they were the previous year.

During the past summer particular care was taken to have the drives conducted in the same manner as in previous years, in order that the effect of driving upon the young males might be noted.

From June 10 (the day after my arrival) to the close of the season, on August 9, there were eleven drives made, the longest one being from Middle Hill, about 2 miles from the village killing ground. With two exceptions, no drives were made from the same hauling grounds except at intervals of two weeks. As the killing this year was limited to 7,500, there could be but few seals taken each week, and this necessitated turning back to the water, about 200 yards distant from the killing

ground, from 75 to 85 per cent of those driven up, and gave an excellent opportunity to observe the effect of driving upon large bands of seals.

In driving it is true that if the weather is unfavorable a few may die en route, or in anticipation of their death are clubbed, skinned, and their pelts added to the quota. It is also true that sometimes there are manifestations of weariness and exhaustion among the driven seals; that driving causes some excitement; that occasionally smothering occurs, and that there are other episodes happening on and about the killing field which are necessarily incident to and must always form part of the killing of seals on land, and which are likely to obscure the judgment of the observer or be allowed to assume undue prominence in his mind. But the chief question is the potency of these episodes as destructive agents. To what extent do they occur and to what extent do they effect the herd at large are the points to be fairly considered; and their consideration must not be influenced by an exaggeration due to the sensibilities of the observer. Care should be and is at all times exercised to avoid needless waste; but after giving the greatest prominence possible to the injurious methods which are alleged to have been employed at different times since the American occupancy of the islands, my observations lead me to believe that the loss of life from the causes indicated above would be but a fraction of 1 per cent of the seals driven; and I also believe that it can not, with any show of justice, be made to account for or play other than a very insignificant part in the diminution of seal life. After my observations of two seasons I can not believe that creatures which in their maturity possess sufficient vitality to live for eighty or ninety days without food or water, and in which their fetal life can be cut from the mother and still live for days, are as bachelor seals injured in their virility or to any extent disabled physically by the driving to which they are subjected on the Pribilof Islands.

JOSEPH STANLEY-BROWN.

DEAD PUPS.

Deposition of J. C. S. Akerly, surgeon United States Revenue Marine, and resident surgeon on St. Paul Island.

STATE OF CALIFORNIA,
City and County of San Francisco, ss:

J. C. S. Akerly, Ph. B., M. D., having been duly sworn, deposes and says: I am a graduate of the University of California, 1882, and a graduate of the Cooper Medical College, 1885. From June to August 18, 1891, I was surgeon on the revenue-marine steamer *Corwin*. From August 18 to November 24, 1891, I was resident physician on St. Paul Island, one of the Pribilof or seal islands. I am at present a practicing physician at Oakland, Cal. During my stay on the islands I made frequent visits to the different seal rookeries. One thing which attracted my attention was the immense number of dead young seals; another was the presence of quite a number of young seals on all the rookeries in an emaciated and apparently very weak condition. I was requested by the Government agent to examine some of the carcasses for the purpose of determining the cause or causes of their death. I visited and walked over all the rookeries. On all, dead seals were to be found in immense numbers. Their number was more apparent on those rookeries such as *Tolstoi* and Halfway Point, the water sides of which were on

smooth ground, and the eye could glide over patches of ground hundreds of feet in extent which were thickly strewn with carcasses.

Where the water side of the rookeries, as at Northeast Point and the Reef (south of the village), was on rocky ground, the immense number of dead was not so apparent, but a closer examination showed that the dead were there in equally great number scattered among the rocks. In some localities the ground was so thickly strewn with the dead that one had to pick his way carefully in order to avoid stepping on the carcasses. The great mass of dead in all cases was within a short distance of the water's edge. The patches of dead would commence at the water's edge and stretch in a wide swath up into the rookery. Amongst the immense masses of dead were seldom to be found the carcasses of full-grown seals, but the carcasses were those of pups or young seals born that year. I can give no idea of the exact number of dead, but I believe that they could only be numbered by the thousands on each rookery. Along the water's edge, and scattered amongst the dead, were quite a number of live pups, which were in an emaciated condition. Many had hardly the strength to drag themselves out of one's way, thus contrasting strongly, both in appearance and actions, with the plump condition and active, aggressive conduct of the healthy appearing pups.

The majority of the pups, like all healthy nursing animals, were plump and fairly rolling in fat. I have watched the female seals draw up out of the water, each pick out its pup from the hundreds of young seals sporting near the water's edge, and with them scramble to a clear spot on the rookery, and lying down give them suck. Although I saw pups nursing in a great many cases, yet I never saw one of the sickly looking pups receiving attention from the female. They seemed to be deserted.

The cause of the great mortality among the seal pups seemed to me to have ceased to act in great part before my first visits to the rookeries, for subsequent visits did not show as great an increase in the masses of dead as I would have expected had the causes still been in active operation. It seemed to me that there were fewer sickly looking pups at each subsequent visit. This grew to be more and more the case as the season advanced. When I visited the rookeries for the purpose of examining the dead bodies it was with extreme difficulty that carcasses could be found fresh enough to permit of a satisfactory examination. I examined a large number of carcasses. All showed an absence of fatty tissue between the skin and muscular tissue. The omentum in all cases was destitute of fat. These are the positions where fat is usually present in all animals. Well-nourished young animals always have a large amount of fat in these localities. The few carcasses which were found in a fair state of preservation were examined more thoroughly. The stomachs were found empty and contracted, but presented no evidence of disease. The intestines were empty, save in a few cases, where small amounts of fecal matter were found in the large intestines. A careful examination of the intestines failed to discover any evidence of disease. The heart, lungs, liver, and kidneys were in a healthy condition.

Such is the evidence on which I have founded my opinion that the cause of the great mortality during 1891 among the young seals on St. Paul Island, Bering Sea, was caused by the deprivation of mothers' milk. The result of my investigation is that there was great mortality exclusively among nursing seals. Second, the cause of this mortality seemed to have been abated pari passu with the abatement of sea sealing. Third, *the presence of* emaciated, sickly looking pups which

were apparently deserted by their mothers. Fourth, the plump, healthy appearance of all the pups I saw nursing. Fifth, the emaciated condition of the dead. Sixth, the absence of food in the stomachs and their contracted condition. Seventh, the absence of digested food in the intestines. Eighth, the absence of even fecal matter, save in small amounts in a few cases. Ninth, the absence of structural changes in the viscera or other parts of the bodies to account for the death

J. C. S. AKERLY, Ph. B., M. D.

Deposition of Henry W. Elliott.

CITY OF WASHINGTON,
District of Columbia, ss:

Henry W. Elliott, being duly sworn, deposes and says: I am a resident of Cleveland, Ohio, where I was born; am 46 years of age, and am a citizen of the United States.

I first visited the Pribilof Islands in April, 1872, under the joint appointment of the United States Treasury Department and of the Smithsonian Institution, and resided thereon until August, 1873. In 1874 I made another prolonged visit under the authority of a special act of Congress. I visited the islands again briefly in 1876, and during May, June, July, and August, under authority of a special act of Congress, in 1890. During each visit I carefully studied the seal life on these islands, and investigated the habits of the fur seals. In these years I also visited the various islands in and around Bering Sea, the leading ports and inhabited places on the mainland and islands of Alaska in the Pacific Ocean, as also the ports of British Columbia and the United States; witnessed the methods of pelagic sealing, conversed with many pelagic seal hunters, shipmasters, and fur traders, and sought in all possible ways to acquaint myself fully with seal life and the taking of seals.

CLIMATIC CONDITIONS OF PRIBILOF ISLANDS.

The Pribilof Islands possess a peculiar climate. There are but two seasons, winter and summer; the former begins with November and ends with April, the mean temperature being 20° to 26° F. above zero; summer brings only a slight elevation in the temperature, between 15° or 20°, so that the mean temperature of that season is 40° to 46°. With the opening of the summer, about the 1st of May, a cold, moist fog settles down upon these islands, and is ever present until the latter part of October. It is doubtless to this remarkably damp and sunless atmosphere, together with the isolation of these islands, and the fact that from their formation they are rapidly drained, that the seals seek these islands to breed; in fact, it is necessary that such a sunless and moist climate with a low temperature should exist for this species of fur seal when on land, and it becomes highly important that they should be so protected as to make their chosen home as free from unnecessary molestation as possible. It is quite certain that the seal herd which perennially frequents the Pribilof Islands has no other terrestrial haunt, and now never lands, even temporarily, on any other terra firma in or bounding the Pacific Ocean or Bering Sea.

When all the climatic, topographical, and other facts are considered, which are so remarkably favorable to seal life on the Pribilof Islands,

and which, with the exception of the Commander Islands of Russia, can not be found anywhere else in the Northern Pacific or Bering Sea, the reasons are plain why these islands have been selected by the fur seals for their breeding resorts, since reproduction of their kind can not be effected in the sea.

My personal observation and study of seal life during the past twenty years have led me to the certain conclusion that all the herd of fur seals (*Callorhinus ursinus*) which now make their annual migration from and back to the Pribilof Islands (described hereafter) were all born in June and July (annually) upon the Pribilof Islands, pass the first four months of their existence on these islands, nursing at irregular intervals, learning to swim, and in shedding their fetal coats of black hair for their seagoing jackets of hair and fur, leave in November, and annually return there to spend from four to six months of each year. In my published observations of 1872 and 1874 I thought it possible there might be some commingling of the Pribilof seals with the seal herd of the Russian Islands, but from my subsequent study of their migrations and of the varietal differences in the herds in the two localities, it is now very clear to me that they never mingle on the islands, each herd keeping to its own side of the ocean and annually resorting to its own fixed breeding grounds.

ARRIVAL OF THE BULLS.

Between the 1st and 5th of May a few of the adult males (bulls) may be found upon the breeding grounds on the Pribilof Islands, but many of them may be seen swimming a short distance from the shore for several days before landing. The method of landing is to come collectively to these rookeries which they occupied the former season, but whether a bull always takes up the same position or strives to do so I was unable to gather sufficient data to determine, my opinion being to the contrary. After landing, the bulls fight furiously for positions upon the rookeries, the place of advantage being nearest the sea.

FASTING ON THE ROOKERIES.

All the bulls, from the time they have established themselves upon the breeding grounds, do not leave them for a single instant, night or day, nor do they until the end of the breeding season, which closes some time between the 1st and 10th of August as a rule. The bulls therefore for the space of three or four months abstain entirely from food of any kind or water. When they do return to the water they are greatly emaciated and lack life and activity. But the females, directly to the contrary, feed at frequent intervals during the suckling period, and at the end of the season are as sleek and fat as when they first hauled out.

ARRIVAL OF THE COWS.

The cows, or females, begin to come up from the sea during the fore part of June, and after continual battles between the rival bulls are finally settled upon the rookeries. All the females of 2 years of age or older "haul up" on the breeding rookeries, whether they are pregnant or not, and during the period from June until the middle of August they may be found coming and going almost continuously to and from the rookeries, except a few barren cows, which I will mention hereafter. The pregnant cows land upon the islands from instinctive knowledge that their period of gestation, which is about twelve months,

lacking only a few days, has come to an end. As the pups (the young seals) can not be born in the water, the female's instinct causes her to seek the land, upon which her young is brought forth, sometimes in a few hours, but usually in a day or two, after landing.

AGE OF SEALS.

The bulls on the rookeries are at least 6 years of age, that being about the time when they attain their growth, the age of puberty being probably about 5 years. The remainder of the male seals, being those younger and less powerful, called "bachelors," I will refer to later. The cows probably reach their growth between 4 and 5 years, but give birth to their first pup when 3, so that cows 2 years old are found upon the breeding grounds; they are the nubiles.

ORGANIZATION OF THE ROOKERIES.

As the cows haul up on the shores they are met by the bulls, who coax and urge them toward their own position on the rookeries. During this process the most bitter fights occurred between the bulls for possession of the cows in 1872–1874; those nearest the water being the most advantageously located, obtained the greatest number for their harems, sometimes having as many as 40 or 50 cows in their possession, while those farther inland could obtain sometimes only 2 or 3; it was very difficult to fix the average number of cows to a harem in 1872–1874, but I estimated it at about 15 or 20.

PELAGIC COITION IMPOSSIBLE.

In the act of coition on the breeding rookeries I have noticed the fact that no effective coition took place until the cow was brought up to or laid against an inequality of the rookery or fragment of the rock; that, in spite of the bulk of the male being so great and resting upon the female as she lies upon her belly, the orgasms are so rapid and violent that she is shoved forward unless some obstruction holds her in place. This fact is, I believe, sufficient to satisfy anyone who carefully considers the matter that it is a physical impossibility for these seals to copulate in the water. In my opinion there is no conceivable position in which effectual coition can take place in the water. I also observed that the period of connection in the early part of the season lasted from eight to fourteen minutes, and in the latter part, when the bull was not as vigorous, from four to six minutes.

THE PUPS.

Immediately after birth the seal pup begins to move about and to nurse, which it often does to gorging itself. It weighs but 3 or 4 pounds when born and is only about 12 inches long. The female after bringing forth her young goes frequently to and from the water, to feed and bathe. On returning from the sea she will recognize the cry of her young though ten thousand pups are bleating at once, and will immediately go to it. The pups themselves do not recognize their own mothers—a fact I ascertained by careful observation. The mother, however, will not permit any pup but her own to suckle, and will fight off any which attempt it.

YOUNG SEALS LEARNING TO SWIM.

The pup when born can not swim. If he is thrown a rod or two into the water, his head, which is heavy, will immediately sink, and his posterior parts rise to the surface. Suffocation is only a matter of a few

minutes. Until he is almost six weeks old a pup can not live in the water. He then begins to try the water, never going intentionally beyond his depth; soon he becomes bolder and strikes out, using at first only his flippers; then he grows more and more expert, until finally the sea alongshore is his frequent abiding place. The young seal, therefore, up to the time it learns to swim, is a land animal—in no way a full-fledged amphibian; and it requires four months of suckling by its mother on the land before it becomes able to shift for itself and is abandoned by its parents.

BARREN FEMALES.

Whenever a female ceases to breed or is barren she hauls up with the bachelors, and no longer goes on the breeding grounds; she, however, can be easily distinguished, and whenever one became mixed in a drive the natives pointed her out to me in 1872–1874. The whole number of barren cows was then very inconsiderable.

UNATTACHED MALES.

Behind the harems there were always a number of idle and vigorous bulls in 1872–1874, who were unable to obtain any consorts, but they had to do severe battle to maintain their position at all.

DISORGANIZATION OF THE ROOKERIES.

Between the 20th of July, when the rutting season closes, and the 5th or 8th of August, the harems have changed from their methodical compact disposition on the rookeries. The old bulls begin to leave; the pups are gathered into pods or groups. The cows, pups, and idle bulls before mentioned now take possession of the rookeries in a disordered manner, together with a large contingent of the bachelor seals, who have not thus far been permitted to land on the breeding grounds by the other males. By the middle of August three-fourths of the cows spend the greater part of their time in the water, only coming on shore at irregular intervals to nurse their young. The food of the fur seals is mainly fish, squids and crustaceans, and mothers, while nursing their young, I am satisfied, go great distances in Bering Sea for this food—50, 100, and even 200 miles away from the Pribilof Islands for that subsistence.

SWIMMING OF SEALS.

I am unable to state positively how rapidly a seal can swim, but I have seen squads of young bachelors follow the revenue cutter, *Reliance*, upon which I was, swimming alongside and around the vessel for hours, when she was moving at the rate of 14 knots an hour. My opinion is that the bachelors and those cows which are not heavy with pups can travel through the water from 18 to 20 miles an hour for many consecutive hours without pausing to rest.

HOLLUSCHICKIE, OR BACHELOR SEALS.

The male fur seals under the age of 6 years are not allowed to land upon the breeding grounds by the older and stronger males, and so are compelled to herd by themselves. These seals are called holluschickie or bachelors, and the places which they occupy on land are called hauling grounds, in contradistinction to the breeding rookeries. It is from this class of seals that the killable seals are selected.

LOCATING THE HAULING GROUNDS.

The hauling grounds are located on the low, free beaches not occupied by the breeding grounds, or else inland behind the harems. In the latter case, lanes are left between the harems by the old bulls for the bachelors to pass to and from the sea. In 1872 I noticed one of these lanes on the Polavina rookery and the one at Tolstoi and the two at the Reef rookery, but when I returned in 1874 the lanes had been entirely closed up. But the other locations on unoccupied beaches are the most favored hauling grounds. The bachelors when on land can be readily separated into their several classes as to age by the color of their coats and sizes.

DRIVING THE SEALS TO THE KILLING GROUNDS.

Only the bachelor seals of from 2 to 5 years of age have been killed by the lessees of the islands. No female has been or is allowed to be taken; a few have been killed by accident. A number of seals are driven from the hauling grounds to the killing grounds after being separated from the rest by the natives. They can be driven safely at the speed of half a mile an hour, providing the weather is reasonably wet and cold. On arriving at the killing grounds they are killed with clubs and their skins removed. During my visit to the islands, in 1890, I was led to the conclusion that some unnecessary loss of life had been occasioned by excessive driving, and that the methods of culling the herd must be abolished; but this loss, which is bad enough, bears no comparison in its injurious effect upon the herd to that loss by reason of indiscriminate slaughter which is inflicted upon the fur-seal herd unchecked by pelagic hunting. Of this I will speak later. Besides, the injurious effect of excessive driving can be easily corrected. It was stopped in 1890, and has been still further restricted since on the islands.

WEIGHT AND SIZE OF SEALS.

A bull when full grown weighs between 400 and 500 pounds, sometimes even 600, and measures from 6 to 7 feet in length. The female weighs from 70 to 120 pounds, and measures 4 to 4½ feet in length. The bachelors, over 1 year and up to 5 years old, weigh from 50 to 200 pounds, and are from 4 to 5½ or 6 feet in length.

DEPARTURE OF THE SEALS.

About the 1st of November the great mass of the cows and bachelors begin to depart, and the pups following from the islands, going southward, the old bulls having nearly all preceded them in September and October. Some, however, remain as long as the ice and snow will permit, and when the winters are mild and little ice is about the islands, which occasionally occurs, fur seals are seen there until late in January in small numbers, a few hundreds at the most.

THE MIGRATION OF THE PRIBILOF SEAL HERD.

To this, my affidavit, I append a track chart[1] of the path traveled by the Pribilof fur-seal herd in the North Pacific Ocean from the time it leaves the seal islands and Bering Sea in the late autumn until it reenters Bering Sea in June or 4th to 10th of July following. From records kept at Unalaska and Umnak for the last eighty years, and from other information, I believe it to be a fact, well settled, that the

[1] "Not furnished."

fur seals regularly pass out from the waters of Bering Sea into the North Pacific by the middle or end of November as a body; that these animals do not turn to the eastward and up by the peninsular and Kadiak coast, but keep directly south till lost to view.

From ship captains who have sailed during the last twenty years between San Francisco and Puget Sound, I have learned that while making out from San Francisco from the Sound, a long westerly reach, they have seen large numbers of fur seals 800 or more miles at sea in January or late December moving toward the California Coast. Early in January the first stragglers begin to appear off the California Coast and by the middle of February the main body of the herd arrives simultaneously off between Santa Barbara and Cape Mendocino. From this point the progress of the herd northward is indicated on the chart hereto attached.[1] The fact of this annual migration of the Pribilof fur-seal herd and the route thereof is stated from knowledge derived from my own study in the field, and from the testimony of those traders and mariners who responded to my inquiries at Unalaska, Umak, Sannak, Belcovskie, Kadiak, Nuchek, Yakutat, Sitka, Fort Simpson, Victoria, Port Townsend, and Astoria.

THE HERD VISIT ONLY THE PLACE OF THEIR BIRTH.

From all the facts that have come to my knowledge in relation to the annual migration of the fur-seal herd, and also from information carefully gathered, I am convinced and believe that the Pribilof herd of fur seals now never land upon any other coast or islands save the Pribilof group, the land of their birth. At no time along the coast does the herd approach nearer than gunshot of the shore, and is often 100 to 200 miles distant therefrom.

GROWTH OF PELAGIC SEALING.

When I first visited Alaskan waters in 1865–66, and again in 1872, pelagic sealing was almost unknown, except by Indians in canoes along the North Pacific Coast and the catch was small, from 5,000 to 10,000 annually. In 1885 it began to assume larger proportions, for white men then embarked, and in 1886 the number of vessels engaged with white crews in pelagic sealing was 17; the number in 1890 was 42, and in 1891, 86 known craft; and probably 10 or 12 more clearing for "whaling and trading," where, in fact, they intended to seal.

The distinctive effects of open-water killing on the seal herd may be better understood by examining the manner in which pelagic sealing is now carried on.

MANNER OF PELAGIC SEALING.

A sealing schooner is seldom over 80 or under 40 tons measurement, employing 15 or 20 men. The vessel sails well into the track of the migrating herd of fur seals. Each boat, to the number of 7 or 8, is manned with two men, one of whom rows; the other sits in the bow with his shotgun or rifle and gaff-pole. The boat also contains a small keg of water, some provisions, ammunition locker, skinning knives, and an extra pair of oars and sail. These boats are let down over the side of the vessel, and row out one after the other to the windward, taking up positions just so far from each other as to be in hail of the one next to them toward the schooner; in this way they can cover 6, 7, or 8 miles, and the furthermost may be out of sight of the schooner.

[1] *"Not furnished."*

When the boats have taken their position the oarsman just keeps the boat's nose to the wind, and the hunter keeps a lookout for seals.

A fur seal, when discovered by the hunter in the open ocean, is either sleeping or feeding, and so the only classification by these hunters is "feeders" or "sleepers." It is an absolute impossibility for the hunter to determine the sex or the age of any fur seal when in the water, until it is dragged into the boat.

In swimming the seal is always submerged several feet below the surface. The seal also devours its food beneath the water. It is, however, compelled to come up every three, five, or fifteen minutes to breathe, rising head and shoulders above the water for a second or two. If the seal rises very near the hunter's boat it will dive again too quickly to be shot at, but if it raises 30, 50 or 100 yards from the boat, it will pause a moment—long enough for the hunter to shoot at it.

If the seal is not hit or is wounded it at once dives and can never be secured; if it is killed by the shot it sinks, and unless the boat is moved up in a minute or two to the spot where the animal sank the carcass will be invisible from the surface. If, however, the seal happens to be wounded so as to be stunned or dazed, it will flounder on the surface of the water until secured. Except, therefore, in the last peculiar manner of wounding, the seal hunter never knows whether he has missed, wounded, or killed the seal. Provided, however, the boat can be rowed immediately to the spot where the seal was, which depends on the accuracy of fixing the spot—necessarily a most difficult matter—the hunter may perceive the sinking body, if the seal was killed, some 4, 6, or 8 feet below the surface. In that case he reaches down with his gaff and fastens on to the carcass and drags it up to the boat. Seals wounded either fatally or slightly are never found. They instantly dive and swim away, to perish sooner or later.

THE WASTE OF LIFE.

A hunter takes, say, 200 cartridges when he leaves the schooner in the morning, and after perhaps sixteen hours' work returns to the vessel with all these expended. If for these he can show 10 or 12 skins it is considered a good day's work. The pelagic hunter certainly kills and fatally wounds a very large number of animals which he never secures the bodies of, the number hit and secured depending very largely upon the retrieving skill of the hunter. From conversations I have had with pelagic hunters, I am of the opinion that a large majority of them do not get one out of every five that they shoot at within and beyond a range of 50 yards. At 30 to 50 yards' distance they are almost sure to hit them if they use buckshot. No hunter who uses a gun can tell the exact number he secures, as compared with the number he kills or fatally wounds. He can not possibly tell the truth, even if he wants to do so. He usually blazes away at every seal that rises within range to a hundred yards or even farther.

The Indian hunters accompanying a sealing schooner generally use a toggle-headed spear, fastened to the canoe by a line which they use. After a storm the seals sleep more than at any other time, and it is then the Indian hunters are let down in their canoes and paddle off to the windward, the hunter standing or squatting in the bow, spear in hand, looking for the protruding nose of a sleeping seal. When a "sleeper" is seen, the canoe is silently paddled as near the animal as possible, the spear is thrown, and if the seal is struck she is dragged into the canoe by the line. An Indian hunter secures nearly every seal he strikes; but it is also indiscriminate slaughter, as he can not distinguish the age or sex of the "sleeper" before striking it.

PROHIBITION IN BERING SEA AND NORTH PACIFIC NECESSARY.

After carefully examining the situation, actual records, and trustworthy testimony of men engaged in sealing, with whom I have conversed, and also from knowledge of the migratory habit and peculiar circumstances of seal life, I am of the opinion that unchecked pelagic sealing is sure, speedy destruction of the Pribilof herd of fur seals; that if allowed to continue, and the fleet increases in number of vessels and increased skill of hunters, even though the present modus vivendi should remain in force, it would result in the utter commercial ruin of the herd; that in order to preserve the seals from complete destruction, as a commercial factor, it is necessary that pelagic sealing should not only be prohibited in Bering Sea, but also in the North Pacific, from the 1st of May until the end of October, annually. The pelagic hunters to-day kill at least 90 per cent cows, the great majority being with young, nearly ready for delivery, in the Pacific Ocean.

As the physical conditions are such that it is utterly impossible to discriminate in matters of sex or age when shooting or spearing in the water, it is evident that pelagic sealing can not be regulated in the slightest degree beyond its complete prohibition within certain limits. A zone or belt of 30 or even more miles about the Pribilof Islands will be entirely ineffective. No pelagic sealing can be permitted in Bering Sea with safety to the preservation of the herd, and the prohibition should extend into the North Pacific to a period sufficiently early (at least by the 1st of May) in the season to protect in great measure the pregnant female seals as they pass along up the coast.

The visit which I made to the Pribilof Islands in 1890 satisfied me that a very great decrease had taken place in the seal herd which annually resorts to those islands. My observations in 1872, 1874, and 1876 led me to the conclusion that, provided matters were conducted in the seal islands as they were then, 100,000 male seals under 5 years of age might be safely taken each year without injury to the regular birth rates or natural increase of the herd, provided no abnormal cause of destruction occurred. But in 1890 I found an entirely different condition of affairs existing. This decrease I attribute in the greatest measure to the pelagic sealing above mentioned. Its effect has been so great that there is demanded, in my opinion, a cessation of all killing on the islands, except for the necessities of the natives for a few years, as well as the permanent prohibition of pelagic sealing, as already indicated, thus giving an opportunity for the herd to reestablish itself approximately to its normal conditions. When the killing is again permitted on the islands for commercial purposes the regulations of the Treasury Department can be rigidly enforced, overdriving can easily be prevented, and the present killing of pups by the natives for food should be prohibited, at least until the herd shall have reached the form and condition which I found during 1872–1876.

With such regulations in force, and with pelagic sealing discontinued, it may be confidently anticipated that within a few years this species, so valuable to the human race, will be restored to a condition which will render it valuable once again to the commerce of the civilized world; and this restoration will prove enduring.

HENRY W. ELLIOTT.

Subscribed and sworn to before me, a notary public in and for the District of Columbia, this 13th day of April, 1892.

[L. S.] SEVELLON A. BROWN.

UNITED STATES COAST AND GEODETIC SURVEY,
Steamer McArthur, December 9, 1892.

Hon. JOHN W. FOSTER,
Secretary of State, Washington, D. C.

SIR: I have the honor to forward the affidavit desired, and will forward the duplicate to-morrow.

We anchored off Sechat village at 3.30 p. m. April 20. Our native chief came alongside and was requested to come on board in the morning and bring with him some of the chief men of the village. He had planned to go hunting wild geese, which were flying at the time; so I promised him $3 or $5 for his loss of time and to accompany us to other villages. We took their testimony in the morning of the 21st, and ran to another village, anchoring at 10.45 a. m., took testimony and left at 1.20. Anchored off Uchielet at 2.40 and left at 4.25. Anchored off Taylor Island at 7.20 p. m. and left for Port Townsend at 10 p. m.

Two to three dollars were given to each head chief and one dollar each to the others for their loss of time and witness fee after testimony was given. All that was requested of them was to answer the questions truthfully. The white storekeeper was on board but a few minutes, and was invited to take a glass of beer or liquor. The priest dined on board, and, I believe, took a drink and some claret wine. We were not long enough in any one place to intoxicate anyone if we had been foolish enough to do so. I sincerely believe they would give the same testimony to an English party at any time.

There were four commissioned officers of the Navy present during the testimony, and as many of the witnesses could speak and understand English, all were satisfied of their truthfulness.

Very respectfully,

W. P. RAY,
Lieutenant, United States Navy, Commanding.

Deposition of W. P. Ray.

STATE OF CALIFORNIA:

W. P. Ray, being duly sworn, deposes and says: I am an officer in the United States Navy, holding the grade of lieutenant. Under instructions from Washington I went from Port Townsend to Barclay Sound, on the west coast of Vancouver Island, April 19, 1892, in the steamer *McArthur*, of the United States Coast Survey. I returned to Port Townsend three days later. The object of my visit to Barclay Sound was to procure information in the form of affidavits as to the habits of the fur seals, to be used in the pending arbitration with Great Britain. I visited the various points in that vicinity inhabited by the Indians, and took the testimony of a number of these people and of the priest of the village. For greater convenience I took the testimony aboard the steamer, and I agreed to pay, and did pay, each witness a reasonable sum for attendance, which sum did not exceed the usual fee allowed a witness in a court of justice. The total amount disbursed by me in obtaining the testimony of these witnesses was $35, which amount was distributed among 15 men. It was made up partly of the amount paid to each individual witness on account of his attendance on board my vessel, partly of sums paid out to men who undertook to ascertain the whereabouts of certain of the witnesses and secure their attendance as above. Each witness received a plug of tobacco. No other gratuity of any sort was dispensed.

At no time during my stay at Barclay Sound was any intoxicating liquor dispensed to any native witness, nor was any witness under the influence of liquor at the time when I took his testimony. We were not more than two and a half hours at any one village.

The testimony which I obtained was given in every instance willingly and cheerfully. Neither the witness fees nor the gratuities above mentioned formed any part of the consideration for the giving of this testimony, and I firmly believe the same statements will be made to anyone visiting the place for information at any time.

Just before leaving, Chief Charlie, chief of police, stated that he and his people had given food, clothing, shelter, and protection to many shipwrecked Americans, and he requested blue cloth enough to make a uniform suit, as he could not procure any there. It was given to him as a slight acknowledgment of his kindness to our people in distress. Value, $10.

W. P. RAY,
Lieutenant, United States Navy,
Commanding Coast Survey Steamer McArthur.

Sworn to before me this 9th day of December, 1892.

[SEAL.] A. S. MACDONALD.
Notary Public in and for Alameda County, State of California.

Deposition of C. L. Hooper.

DISTRICT OF COLUMBIA,
City of Washington, ss:

Personally appeared before me C. L. Hooper, who, being duly sworn, deposes and says: I am 50 years of age; a resident of Oakland, Cal., and am an officer in the United States Revenue-Marine Service, holding the grade of captain, and commanding the United States revenue-steamer *Corwin.*

In obedience to instructions from the Secretary of the Treasury, I cruised in the North Pacific Ocean from March 9 to May 16, 1892, for the purpose of investigating the habits of the fur seal when at sea. During these investigations I had occasion to take the depositions of a number of natives and white men familiar with the subject.

During a portion of September, all of October, and a portion of November these investigations were continued in the vicinity of the Aleutian Archipelago, and a number of depositions were taken also from the natives of the Aleut villages situated thereon.

No depositions were taken by me from the natives of Vancouver Island, nor from the natives from any other localities except as previously indicated.

In no instance was liquor in any form given by me, or by anyone on my vessel, to any affiant; no affiant was under the influence of liquor when his statement was made; no undue influence of any sort or description was used; no gratuities were given; only such witness fees were paid as would be a fair compensation for loss of time when such loss of time actually occurred, and the testimony obtained was given freely and willingly.

Two hundred and eighty depositions were taken, and the aggregate fees paid was $69.50.

C. L. HOOPER.

Subscribed and sworn to before me this 13th day of December, 1892.

[SEAL.] SEVELLON A. BROWN.

Deposition of William H. Williams.

DISTRICT OF COLUMBIA,
City of Washington, ss:

Personally appeared before me William H. Williams, who being duly sworn, deposes and says: I reside at Wellington, Ohio; I am 56 years of age, and am United States Treasury agent in charge of the Pribilof Islands.

I have seen several newspaper articles in which I am charged with having "suborned Indian testimony," with employing "unfair means" in obtaining evidence from Indians, and that conclusive proof of this misconduct has been procured by Major Sherwood of the Dominion police.

The facts in connection with the procuring of these depositions are as follows: During the summer of 1892 I had occasion, in accordance with instructions from the Secretary of the Treasury, to take the depositions of certain natives concerning the subjects of seal life and sealing at sea. The Indians from whom I took depositions were the Makah Indians at the Makah Agency, two Nitnat Indians at the same place, and the natives on the Pribilof Islands. No depositions were taken by me from any other natives, and I was never at Barclay Sound, on the west of Vancouver Island, or on the west coast of British Columbia, In taking depositions from the Makah Indians the only sum of money paid was $2.50, which was given by me to Chestoqua Peterson, son of the chief, for his services as interpreter for two and one-half days. On the Pribilof Islands the sum of $5 was paid to Simeon Melivedof, a native and school teacher on the island, for four days' services as a copyist. These were the only sums of money paid by me to Indians or to natives, or to anyone in Alaska.

In no instance was any liquor given to an affiant by me, nor by any one either directly or indirectly associated with me; nor was any affiant under the influence of liquor when his deposition was made or verified; and no undue influence of any sort or description was employed. No gratuities in any form were given. The testimony obtained was not only freely and willingly given, in all instances, but often voluntarily. This was especially true of the two Nitnat Indians.

In the case of the natives at the Makah Agency, the depositions were taken in the office of the Indian agent, Glynn, and under his personal knowledge. He is a radical in his opposition to the giving of intoxicants to natives, and had anyone attempted to offer one of the Indians liquor he would have been at once ejected from the agency.

WM. H. WILLIAMS.

Subscribed and sworn to before me this 20th day of December, 1892.
[SEAL.] CHAS. S. HUGHES, *Notary Public.*

Additional deposition of William H. Williams.

DISTRICT OF COLUMBIA,
City of Washington, ss:

Personally appeared before me William H. Williams, who, being duly sworn, deposes and says: I reside at Wellington, Ohio; am 56 years of age, and am United States Treasury agent in charge of the Pribilof Islands.

During the summer of 1892 I had occasion, in accordance with instructions from the Secretary of the Treasury, to take the depositions of cer-

tain white men concerning the subject of sealing at sea. The depositions were taken in Victoria from ship captains, seamen, boat pullers and steerers, seal hunters, and others interested in sealing, among them the vice-president of the Sealers' Association. All depositions were taken and verified before the United States consul, Myers, at Victoria. This was the only place in which I took depositions in British Columbia. In no instance was any liquor given by me to an affiant; nor was any affiant under the influence of liquor when his deposition was made or verified; and no undue influence of any sort or description was employed. No gratuities were given. The testimony obtained was, in all instances, not only given freely and willingly, but often voluntarily. The usual witness fees (in this case ranging from $1 to $3) were paid, and only in three instances was the latter sum given, the usual price being $2.

WM. H. WILLIAMS.

Subscribed and sworn to before me this 20th day of December, 1892.

[SEAL.] CHAS. S. HUGHES, *Notary Public.*

Deposition of Joseph Murray.

DISTRICT OF COLUMBIA,
City of Washington, ss:

Personally appeared before me Joseph Murray, who, being duly sworn, deposes and says: I reside at Fort Collins, Colo.; I am 50 years of age, and am the first assistant Treasury agent at the Pribilof Islands.

In obedience to instructions from the Secretary of the Treasury, I accompanied the Fish Commission steamer *Albatross* on the cruise made by that vessel during the month of April, 1892, and took depositions from the natives of Cooks Inlet and Prince William Sound. I also took depositions in Kodiak, Victoria, Port Townsend, and Seattle from white men. In no instance was any liquor given to an affiant; nor was any affiant under the influence of liquor when his statement was made or verified; and no undue influence of any sort or description was employed. No compensation whatsoever was given by the Government to any native or other person for any purpose, and the testimony obtained was in all instances given freely and willingly.

JOSEPH MURRAY.

Subscribed and sworn to before me this 21st day of December, 1892.

[SEAL.] JOSEPH A. KINSLEY, *Notary Public.*

DESTRUCTION OF FEMALE SEALS.

Testimony of American furriers.

Relative to matter of depletion of seal herds of the Pribilof Islands, this most deplorable fact is due in our opinion in great part, if not entirely, to the action of sealers in the indiscriminate killing of these animals while in transit to and from these islands for breeding purposes, the females being killed in much greater proportionate numbers, owing to their less aggressive nature and their being less able to escape. While on their way to these islands the cow (female) seal is in a condition of pregnancy, the period of gestation ending shortly after their landing. If intercepted and killed while in this condition the loss is obvious. *(G. G. Gunther's Sons.)*

At that time (1865) he made his purchases from the Indians on the western coast of the American continent, who offered to him only the skins of female seals; that the price he originally paid for them was as low as 50 cents per skin; that he offered the Indians a much higher price for male skins, and was told by them that the male seals could not be caught, and that many Indians whom he has personally seen kill seals, and from whom he has bought skins, have told him that male seals and the young cows were too active to be caught, and that it was only the female seals heavy with young which they could catch. The males, for instance, as deponent was told by the seal hunters, come up to the surface of the water after diving often as much as a mile from the place they went down, whereas the females can, when pregnant, hardly dive at all.

Deponent says that, from his own observation of live seals during many years, and from his personal inspection of the skins, he knows the difference between the skin of a female seal and a male seal to be very marked, and that the two are easily distinguishable. The skin of a female shows the marks of the breasts, about which there is no fur. The belly of the female seal is barren of fur also, whereas on a male the fur is thick and evenly distributed. The female seal has a much narrower head than the male seal, and this difference is apparent in the skins; also that the differences between the male and female seals' skins are marked; that there is now and always has been a difference in the price of the two from 300 to 500 per cent. For example, at the last sales in London, on the 22d day of February, 1892, there were sold 30,000 female skins at a price of 40 shillings apiece, and 13,000 male seals at a price of 130 shillings apiece, on an average.

Second. That from the year 1864 down to the present day deponent or his firm have been large purchasers of seal skins on the western coast of America from the Indians and residents on the British coast; and deponent believes that he has handled nearly three-fourths of the catch from that time down to the present. That during the whole of this period he has purchased from 30,000 to 40,000 seal skins a year, and that he has personally inspected and physically handled the most of the skins so bought by him or his firm.

That from the year 1880 he has been in the habit of buying skins from American and English vessels, engaged in what is now known as poaching, and that he has personally inspected every cargo bought, and seen unloaded from the poaching vessels, and subsequently seen and superintended the unpacking of the same in his own warehouse; that the most of the skins mentioned as purchased by him have been bought from the poaching vessels, and that of the skins so bought from the vessels known as poachers deponent says that at least 90 per cent of the total number of skins were those of female seals, and that the skins of male seals found among those cargoes were the skins of very small animals, not exceeding 2 years of age; and, further, that the age of the seal may be told accurately from the size of its skin.

Third. That the skins bought at Victoria from the poaching vessels are shipped by him largely to the firm of C. M. Lampson & Co., in London, who are the largest sellers of skins in the world, and the agents of deponent's firm; that he has been through the establishment of C. M. Lampson & Co., in London, very frequently; that he has frequently heard stated by the superintendent thereof that the great majority of the skins received by them from what is called the "Northwest catch"—that is, the northwest coast of Victoria—are the skins of seals caught by vessels in the open Pacific or the Bering Sea, and that a

large proportion of said skins, amounting to at least 90 per cent, were in his, the said superintendent's, judgment obviously the skins of female seals.

Fourth. That deponent has frequently requested the captains of the poaching vessels sailing from Victoria and other ports to obtain the skins of male seals, and stated that he would give twice as much money, or even more, for such skins than he would pay for the skins of females. Each and all of the captains so approached laughed at the idea of catching male seals in the open sea, and said that it was impossible for them to do it, and that they could not catch male seals unless they could get upon the islands, which, except once in a long while, they were unable to do, in consequence of the restrictions imposed by the United States Government; because, they said, the males were more active, and could outswim any boat which their several vessels had, and that it was only the female seals who were heavy with young which could be caught. Among the captains of vessels with whom deponent has talked, and who have stated to him that they were unable to catch anything but females, are the following: Captain Cathcart, an American, now about 75 years of age, who commanded the schooner *San Diego*, and who subsequently commanded other vessels; Capt. Harry Harmson, Capt. George W. Littlejohn, Capt. A. Carlson, Gustav Sundvall, and others, whose names he does not now remember. (Herman Liebes.)

I find in handling the skins taken in Bering Sea that the teats of those from the cow seals are much larger and much more developed than from the ones taken in the North Pacific before they have given birth to their young; and the fur on the belly of the former is thinner and poorer than on the latter, as a result, I suppose, of the heat and distention of the udder consequent upon giving milk. (Isaac Liebes.)

In my examination of skins offered for sale by sealing schooners I found that over 90 per cent were skins taken from females. The sides of the female skins are swollen, and are wider on the belly than those of the males. The teats are very discernible on the females, and it can be plainly seen where the young have been suckling. The head of the females is also much narrower. (Sidney Liebes.)

I have read the affidavit of John J. Phelan, verified the 18th day of June, 1892. I was present at the examination of seal skins therein referred to. While Phelan inspected all of these seal skins, I assisted him in the inspection of about three-fourths of them. I know that of those inspected jointly none were improperly classed as the skins of female animals. (Chas. E. McClennen.)

I was visiting in San Francisco in the winter of 1890–91, and I worked in a fur store during several months of my stay there, and I was called on to handle and inspect thousands of the skins taken by schooners in Bering Sea, and they were nearly all cow seal skins. (Anton Melovedoff.)

In buying the catch of schooners engaged in the sealing business I have observed that fully 50 per cent of them were females, and had either given birth to their young or were heavy in pup when killed, which was easily observed by the width of the skin of the belly and the small head and development of the teat. (R. H. Sternfels.)

The first consignment was placed in cold storage at the Central Stores in New York City. A short time since I consented, at the request of the United States Government, that this consignment be examined, in

order to determine how many female skins it contained. To perform the examination I detailed John J. Phelan. This man has been in the employ of my father or of myself since the year 1868. I regard him as one of the most competent, trustworthy men in our service. I have read an affidavit verified by him on the 18th of June. I agree entirely with what he says concerning his experience in the handling and dressing of skins, and from what I know of his character and ability I believe that everything stated by him in this affidavit is correct. (Geo. H. Treadwell.)

It is true that the Northwest Coast catches have of late years placed upon the market a certain number of good skins which could be purchased at prices far below those for which the skins of the Alaska catch were sold. But I realize that this can not continue to be the case, for it is a matter of common knowledge among furriers that these Northwest Coast catches are composed mainly of the skins of female animals, and I understand that the killing of the seals is rapidly impairing the value of the herd. (Samuel Ullmann.)

I have for many years personally examined numerous shipments of Northwest Coast skins purchased at Victoria. I have had such experience in handling fur-seal skins as enables me, readily in most cases, but always upon careful examination, to distinguish a female skin from a male skin, and I know it to be a fact that a very large proportion of the skins in such shipments are those taken from female animals. It is also true that a large number of skins in many of these shipments are rendered almost valueless through the numerous bullet holes which they contain. (Samuel Ullmann.)

I have observed that by far the larger portion of skins purchased by me were taken from female seals. Not less than eight out of every ten were from cows with pup or in milk. (C. T. Wagner.)

During the past two years I have handled large numbers of Northwest Coast skins (i. e., skins of animals taken in the Pacific Ocean or in Bering Sea). I have assorted all of them, and in doing so have specially noticed the fact that a very large proportion were skins of female animals. To determine this fact in the case of dressed skins I see whether there are any teat holes. I never call a skin a female skin unless I can find two such holes on either side. These holes can be easily distinguished from bullet or buckshot holes, of which there are generally a great number in Northwest Coast skins. In the case of a shot hole it is always evident that the surrounding fur has been abruptly cut off, while around the edge of a teat hole the fur gradually shortens as it reaches the edge and naturally ceases to grow at the edge. I have just looked over an original case of 90 dressed and dyed Northwest Coast fur-seal skins, which have been lately received from London, and were still under seal placed on them in London. I found that of these 90 skins 9 only were those of male animals. (Wm. Wiepert.)

Deponent further says that the skins of the Northwest catch are almost entirely the skins of females; that the skins of males and the skins of females may be as readily distinguished from each other as the skins of the different sexes of any other animals when seen before being dyed and dressed, and that the reason why the skins of this catch are almost exclusively females is that the male seal is much more active and much more able to escape from the boats engaged in this manner of hunting than the female seal, and that a large number of *the female seals* included in the Northwest catch are of animals heavy

with young. A large number of females are also caught on their way from and to the Pribilof Islands and their feeding grounds before and after the delivery of their young on those islands. (C. A. Williams.)

A statement is attached thereto,* prepared by deponent, giving his estimate of the number of female seals killed by pelagic hunting in the past twenty-one years. (C. A. Williams.)

That for the last fifteen years he has had consigned to him by fur sealers from 8,000 to 10,000 seal skins annually, for the purpose of dressing and dyeing the same; that about 50 per cent. of the skins so received by him came from London in casks marked as they are catalogued by C. M. Lampson & Co., and are the skins belonging to what is known as the Northwest catch; and deponent is informed and believes that the Northwest catch, as the term is used in the trade, means the skins of seals caught in the open sea and not upon the islands. Another reason for this belief is the fact that all of the skins of the Northwest catch contain marks showing that the animal has been killed by bullets or buckshot, the skins being pierced by the shot, whereas the skins killed on the American and Russian islands are killed on land by clubs and are not pierced.

That of the skins of the Northwest catch coming into his hands for treatment probably all are the skins of the female seal, and that the same can be distinguished from the skins of the male seal by reason of the breasts and of the thinness of the fur around the same and upon the belly, most of the females being killed while they are bearing their young, and the fur therefore being stretched and thinner over that part of the body; and also for the further reason that the head of the female seal is much narrower than that of the male seal, and that this point of difference is obvious in the skins of the two classes; that of the total number of skins received by him about 25 per cent are the skins of the Alaska and Copper catches; that all the skins of the Alaska catch are male seals, and an overwhelming proportion of the Copper catch are likewise male skins; that the remainder of the skins sent to deponent for dressing and dyeing, as aforesaid, are received by him through the house of Herman Liebes & Co., of San Francisco, and others, the majority, however, from Herman Liebes & Co. The skins received from the latter sources are from each of the three catches known to the trade as the Copper, Alaska, and Northwest catches, although the major part thereof belong to what is known as the Northwest catch, and are, as in the case of the skins received from London of that catch, all skins of the female seal. (Jos. D. Williams.)

In examining and purchasing seal skins from schooners in their raw state I have observed that 90 per cent of their catch are females. I know that to be a fact, because the heads of the females are smaller, the bellies larger, and the teats can be plainly seen. The teats show more plainly when the skin is dressed and dyed. In examining the skins taken by sealing schooners I have found most of them perforated with shot, making them much less valuable thereby; formerly more of them used to be killed with a rifle, which did not injure the skin as much. (Maurice Windmiller.)

The destruction of the seals in the North Pacific Ocean, as well as in the Bering Sea, is largely confined to females. This fact can not be disputed successfully. I made an examination of the reports of the

*Not furnished.

gentlemen who handled the North Pacific collection, up to and including the year 1889, and all agreed that the skins were nearly all from females. It may not be out of place to explain that the smaller value of the female seal, especially after the birth of her pup, is in a measure due to the wearing of the fur around the teats. The amount of merchantable fur being reduced to that extent, makes it necessary for the handlers of skins to observe carefully whether pelts are male or female, as well as their general condition. They make a complete classification, and being experts in their business are not likely to make mistakes. (Theo. T. Williams.)

PELAGIC SEALING.

Deposition of Maurice Windmiller, furrier, San Francisco.

STATE OF CALIFORNIA,
City and County of San Francisco, ss:

Maurice Windmiller, having been duly sworn, deposes and says: My age is 46; I reside in San Francisco; my occupation is that of a furrier. I have been engaged in the fur business all my life, and my father was a furrier before me. I am an expert in dressed and undressed, raw, and made-up furs, and also a dealer and manufacturer in the same. I have bought and examined large numbers of fur-seal skins during the last twelve years caught by sealing schooners both on the American and Russian side of the North Pacific and Bering Sea, and I can easily distinguish one from the other.

The Russian seal is a smaller seal, and the fur is not as close as the fur of the Alaska seal, nor as good quality. They are an entirely different herd from those on the American side, and their skins have peculiar characteristics by which it is not difficult to separate them. In examining and purchasing seal skins from the schooners in their raw state I have observed that 90 per cent of their catch are females. I know that to be a fact because the heads of the females are smaller, the bellies larger, and the teats can be plainly seen. The teats show more plainly when the skin is dressed and dyed. In examining the seals taken by sealing schooners I have found most of them perforated with shot, making them much less valuable thereby. Formerly more of them used to be killed with a rifle, which did not injure the skins as much.

MAURICE WINDMILLER.

GENERAL SEAL-SKIN INDUSTRY.

Deposition of Joseph D. Williams, furrier, New York.

STATE OF NEW YORK,
City and County of New York, ss:

Joseph D. Williams, being duly sworn, says that he is 74 years of age, a citizen of the United States, and a resident of Brooklyn, in the State of New York; that he has been engaged in the business of dressing and dyeing fur-seal skins continuously for fifteen years past, and prior to that time, at intervals during the whole time he has been engaged in business, during a period of some fifty-odd years, he has

dressed and dyed seal skins, and that his father was engaged in the same business before him; that for the last fifteen years he has had consigned to him by fur dealers from 8,000 to 10,000 seal skins annually for the purpose of dressing and dyeing the same; that about 50 per cent of the skins so received by him came from London in casks marked as they are catalogued by C. M. Lampson & Co., and are the skins belonging to what is known as the Northwest catch; and deponent is informed and believes that the Northwest catch, as the term is used in the trade, means the skins of seals caught in the open sea, and not upon the islands. Another reason for this belief is the fact that all of the skins of the Northwest catch contain marks showing that the animal had been killed by bullets or buckshot, the skins being pierced by the shot, whereas the skins killed on the American and Russian islands are killed on land by clubs and are not pierced.

That of the skins of the Northwest catch coming into his hands for treatment probably all are the skins of the female seal, and that the same can be distinguished from the skins of the male seal by reason of the breasts and of the thinness of the fur around the same and upon the belly, most of the female seals being killed while they are bearing their young, and the fur therefore being stretched and thinner over that part of the body; and also for the further reason that the head of the female seal is much narrower than that of the male seal, and that this point of difference is obvious in the skins of the two classes. That of the total number of the skins received by him about 25 per cent are the skins of the Alaska and Copper catch. That all the skins of the Alaska catch are male seals, and an overwhelming proportion of the Copper catch are likewise male skins. That the remainder of the skins sent to deponent for dressing and dyeing as aforesaid are received by him through the house of Herman Liebes & Co., of San Francisco, and others, the majority, however, from Herman Liebes & Co. The skins received from the latter sources are from each of the three catches known to the trade as the Copper, Alaska, and Northwest catch, although the major part thereof belong to what is known as the Northwest catch, and are, as in the case of the skins received from London of that catch, all skins of the female seal.

JOSEPH D. WILLIAMS.

DESTRUCTION OF FEMALE SEALS.

Testimony of British furriers.

I can also tell by examining a skin whether it has been taken from a female or a male. I have examined and sorted a great many thousand skins taken from sealing schooners, and have observed that they are nearly all females, a few being old bulls and yearlings. A female seal has a smaller head and a larger belly when with young than a male seal, and the fur on the belly when with young is much thinner, and the fur on the belly part where the teats are, in consequence of being worn, is not worth much, and has to be cut off after being dyed. (George Bantle.)

The skins of the male and female animal are readily distinguishable from each other in the adult stage by reason of the difference in the shape of the heads. That the Copper and Alaska skins are almost exclusively the skins of the male animal, and the skins of the North-

west catch are at least 80 per cent of the skins of the female animal. That prior to and in preparation for making this deposition deponent says he carefully looked through two large lots of skins now in his warehouse for the especial purpose of estimating the percentage of female skins found among the Northwest catch, and he believes the above estimate to be accurate. That the skins in the Northwest catch are also pierced with shot and spear marks, in consequence of having been killed in the open water instead of upon land by club. (H. S. Bevington.)

And in the same way deponent thinks, from his own personal experience in handling skins, that he would have no difficulty whatever in separating the skins of the Northwest catch from the skins of the Alaska catch by reason of the fact that they are the skins almost exclusively of females, and also that the fur upon the bearing female seals is much thinner than upon the skin of the male seals; the skin of the animal while pregnant being extended and the fur extended over a large area. (Alfred Fraser.)

That the said firm can distinguish very readily the source of production of the skins when the latter are in their undressed state; that for several years besides the skins of the regular companies, such as the Alaska Company (American concessionaire) and the Copper Company (Russian concessionaire), the said firm has bought quantities of skins called Northwest Coast, Victoria, etc. That these skins are those of animals caught in the open sea by persons who apparently derive therefrom large profits, and nearly three-quarters of them are those of females and pups, these probably being less difficult to take than males; that these animals are taken by being shot. That the seals taken by the Alaska and Copper companies are males; the destruction of which is much less prejudicial to the preservation of the race, and which furnish the best skins, these being much finer and more furnished with down; that they are killed on the islands with clubs. That every animal killed by ball or shot bears the traces of such slaughter, which marks greatly depreciate the value of the skin. (Emin Hertz.)

An essential point of difference between the skins of the Northwest catch and the skins of the Alaska and Copper Island catches consists in the fact that most of the Northwest skins are the skins of the female seal, while the Copper and Alaska skins are of the male seal. Deponent has made no computation or examination which would enable him to say specifically what proportion of the Northwest catch are the skins of the female seal, but it is the fact that the great majority, deponent would say 75 to 80 per cent, of the skins of this catch are the skins of the female animal. The skins of the female seal, for instance, show the marks of the breast, and the fur on the belly is thinner, and the whole of the fur is also finer, lower in pile; that is, the fibers composing the fur are shorter than in the case of the male seal. Another means of distinguishing the female skins from the skins of the male lies in the fact that the skins of the female are narrower at the head and tail and proportionately wider in the belly than the skins of the male seal. Another means of distinguishing the seals of the Northwest catch from those of the Copper Island and Alaska catches consists in the fact that nearly all the skins of this catch have holes in them, which deponent understands is caused by the fact that the seals from which they are taken have been shot or speared in the open sea, and not—as is the case with the seals from which the skins of Copper Island and Alaska catches are taken and killed—with clubs upon land. (Walter E. Martin.)

Both the Copper Island skins and the Alaska skins are almost exclusively the skins of the male seals, and the difference between the skin of a male seal and a female seal of adult age can be as readily seen as between the skins of different sexes of other animals. That the Northwest skins are, in turn distinguishable from the Copper Island and Alaska skins, first by reason of the fact that a very large proportion of the adult skins are obviously the skins of female animals; second, because they are all pierced with a spear or harpoon or shot, in consequence of being killed in open sea, and not, as in the case of Copper Island and Alaska skins, being killed upon land by clubs; third, because the Northwest skins are cured upon vessels by the crews of which they are killed, upon which there are not the same facilities for flaying or salting the skins as there are upon land, where the Copper and Alaska skins are flayed and salted. The Japanese skins, which, I think, are now included in the Northwest catch, are distinguishable from the other skins of the Northwest catch by being yellower in color, having a much shorter pile, because they are salted with fine salt, and have plenty of blubber on the pelt. That the skins purchased by deponent's firm are handed over by it to what are called dressers and dyers, for the purpose of being dressed and dyed. (Henry Poland.)

That the differences in the skins of the adult male and the adult female seals are as marked as the difference between the skins of the two sexes of the other animals, and that in the Northwest catch from 85 to 90 per cent of the skins are of the female animal. Deponent does not mean to state that these figures are mathematically accurate, but they are, in his judgment, approximately exact. (Geo. Rice.)

I should estimate the proportion of female skins included within the Northwest catch at at least 75 per cent, and I should not be surprised at, nor be inclined to contradict, an estimate of upward of 90 per cent. My sorter, who actually handles the skins, estimates the number of female skins in the Northwest catch at 90 per cent. One means of distinguishing the skins of the Northwest catch from those of the other catches is the fact that they are pierced with shot or spear holes, having been killed in the open sea, and not, as in the case of the Copper and Alaska catches, killed upon land with clubs. (William C. B. Stamp.)

The number of Japanese skins averages, deponent should say, about 6,000 a year, although there is a good deal of fluctuation in the quantity from year to year, and deponent says that, like the other skins included in the Northwest catch, they are principally the skins of female seals, not easily distinguishable from the skins taken from the herds frequenting the eastern part of the Pacific Ocean and Bering Sea, except by reason of their being principally speared instead of shot. The most essential difference between the Northwest skins and the Alaska and Copper catches is that the Northwest skins, so far as they are skins of adult seals, are almost exclusively the skins of female seals, and are nearly always pierced with shot, bullet, or spear holes. The skins of the adult female seals may be as readily distinguishable from the skins of the adult male as the skins of the different sexes of other animals; that practically the whole of the adult Northwest-catch seals were the skins of female seals, but the skins of the younger animals included within this Northwest catch, of which we have at times considerable numbers, are much more difficult to separate into male and female skins, and I am not prepared to say that I could distinguish the male from the female skins of young animals. A certain percentage of young

animals is found among the consignments received by us at the beginning of each season, which, we understand, and are informed, are the skins of seals caught in the Pacific Ocean off the west coast of America, but a much smaller percentage of such small skins is found among the consignment later in the season, which we are informed are of seals caught in the Bering Sea. (Emil Teichmann.)

From C. M. Lampson & Co. to C. A. Williams, August 22, 1889.

LONDON, 64 QUEEN STREET, E. C.,
August 22, 1889.

DEAR SIR: We beg to acknowledge receipt of your favor of the 10th instant, inclosing draft of a paper to be submitted to Congress on merchant marine and fisheries.

We have read the paper with a great deal of interest and consider that it places the matter in a thoroughly impartial way before its readers. It has been so carefully prepared and goes into all details so fully that we can add but little to it. There are, however, one or two points to which we beg to draw your attention, and which you will find marked in red ink on the paper.

When speaking of the supply of fur skins we would suggest mentioning the following localities:

Cape of Good Hope.—From some islands off this cape, under the protection of the Cape Government, a yearly supply of from 5,000 to 8,000 skins is derived. All these skins come to the London market, part of them being sold at public auction, the remainder being dressed and dyed for account of the owners.

Japan.—The supply from this source has varied very much of late years, amounting sometimes to 15,000 skins a year, at others to only 5,000. Last year, we understand, the Japanese Government passed stringent laws prohibiting the killing and importation of seals, with the view of protecting seal life and encouraging rookeries, and the consequence has been that this year very few skins have come forward.

Vancouver Island.—For many years past, indeed long before the formation of the Alaska Company, regular supplies of fur seals in the salted and parchment state have come to the London market, killed mostly off Cape Flattery. The quantity, we should say, has averaged at least 10,000 per annum. This catch takes place in the months of March and April, and we believe that the animals from which these skins are derived are the females of the Alaska seals, just the same as those caught in the Bering Sea.

Had this quantity been materially increased, we feel sure that the breeding on the Pribilof Islands would have suffered before now; but fortunately the catch must necessarily be a limited one, owing to the stormy time of the year at which it is made and the dangerous coast, where the seals only for a short time are found. It must, however, be evident that if these animals are followed into the Bering Sea and hunted down in a calm sea in the quietest months of the year, a practically unlimited quantity of females might be taken, and, as you say, it would be only a few years till the Alaska seal was a thing of the past.

C. M. LAMPSON & CO.

C. A. WILLIAMS, Esq., New London.

TESTIMONY RELATING TO THE GENERAL SEAL-SKIN INDUSTRY IN GREAT BRITAIN.

Deposition of H. S. Bevington, head of the firm of Bevington & Morris, furriers, London.

H. S. Bevington, M. A., being duly sworn, doth depose and say: That he is 40 years of age and a subject of Her Britannic Majesty, and is the head of the firm of Bevington & Morris, doing business as fur merchants and manufacturers at 28 Cannon street, in the city of London; that his said firm was founded in the year 1726, and has been continued in the same family during the whole of these years down to the present time, and has been engaged during the whole of the period since 1726 in the same business, dealing in furs and leather; that deponent has been in the business ever since the year 1873. During the whole of the period since that date his said firm has been in the habit of buying fur-seal skins, and he knows from his general knowledge of the business that prior to that time they were in the habit of buying seal skins ever since they became an article of commerce; that deponent has personally handled many thousands of skins of the fur seal, and by reason of that fact and of his experience in his business, has a general knowledge of the history of the fur-seal skin business and a general and precise knowledge of the several kinds of skins which now and for many years last past have come upon the London market; that since deponent has been in business skins coming upon the London market have been principally divided into three classes, known as the Alaska catch, the Copper catch, and the Northwest catch. Small supplies have also been received from the Southern Sea, and Lobos Islands, Falkland Islands, and Cape Horn, but the skins arriving from these last-mentioned localities make no figure in the market; that what is known as the Alaska catch consists of skins of seals which are killed upon the Pribilof Islands, in the Bering Sea, and the Copper catch of skins which are killed upon the Copper and Bering islands, in Russian waters.

That the Northwest skins consist of skins taken from animals which are caught in the open Pacific Ocean off the coast of British Columbia or in the Bering Sea; that the differences between the three several sorts of skins last mentioned are so marked as to enable any person skilled in the business or accustomed to handle the same to readily distinguish the skins of one catch from those of another, especially in bulk, and it is the fact that when they reach the market the skins of each class come separately and are not found mingled with those belonging to the other classes. The skins of the Copper Island catch are distinguished from the skins of the Alaska and Northwest catch, which two last-mentioned classes of skins appear to be nearly allied to each other, and are of the same general character, by reason of the fact that in their raw state the Copper skins are lighter in color than either of the other two, and in the dried state there is a marked difference in the appearance of the fur of the Copper and the other two classes of skins. This difference is difficult to describe to a person unaccustomed to handle skins, but it is nevertheless clear and distinct to an expert, and may be generally described by saying that the Copper skins are of a close, short, and shiny fur, particularly down by the flank, to a greater extent than the Alaska and Northwest skins. The skins of the male and female animal are readily distinguished from each other in the adult stage by reason of the difference in the shape of the heads;

that the Copper and Alaska skins are almost exclusively the skins of the male animal, and the skins of the Northwest catch are at least 80 per cent of the skins of the female animal; that prior to and in preparation for making this deposition, deponent says, he carefully looked through two large lots of skins now in his warehouse for the special purpose of estimating the percentage of female skins found among the Northwest catch, and he believes the above estimate to be accurate.

That the skins in the Northwest catch are also pierced with shot and spear marks, in consequence of having been killed in the open water instead of upon land by clubs; that the business of dealing in fur-seal skins in the city of London has become an established and important industry. Deponent is informed that practically all the seal skins in the world are sold in London, and the number runs up in the year to between 100,000 and 200,000, averaging considerably over 150,000 a year. These skins are sold for the most part either by the firm of C. M. Lampson & Co., through their brokers, Goad, Rigg & Co., or by the firm of Culverwell, Brooks & Co. At the auction sales, which are advertised two or three times in the year by these firms, skins are bought by dealers from all over the world, who are present either in person or by proxy. The next stage in the industry is the dressing and dyeing of the furs, and practically the whole of these fur-seal skins sold in London are dressed and dyed in that city. The principal firms engaged in that business are C. W. Martin & Sons and George Rice. Deponent's own firm dress a small number of skins, and have dressed in one year as many as 23,000, and formerly dyed large numbers of skins, but do not now dye skins, as the secret of the present fashionable color is now in the hands of other firms. After having been dressed and dyed, the skins of the fur seal are then passed into the hands of fur merchants, by whom, in turn, they are passed to furriers and drapers and retail dealers generally. Deponent estimates the total number of persons engaged in one way or another, directly or indirectly, in the fur-seal industry in the city of London to be at least 2,000 or 3,000, many of whom are skilled laborers, all receiving high wages.

That a large amount of capital is also invested in the business in the city of London, and the precise value of the industry can be estimated by reckoning the amount expended in the various processes which deponent has enumerated upon each skin. For instance, after the skins arrive at the London market they are sold at the sales at prices which in the year 1890 averaged, say, 80 shillings apiece. The commissions on the selling of the goods, including warehousing, insurance, and so forth, deponent believes, amount to 6 per cent of the price obtained. That the amount paid for dressing, dyeing, and machining each skin averages, say, 16 shillings. These processes take together about four or five months. The next expenditure upon the skin is, say, an average of 5 shillings at least for each skin for cutting up, and that thereafter there will be an average of at least from 3 to 4 shillings per skin expended in quilting, lining, and making up the jackets or other garments, showing a total expenditure upon each skin for labor alone, in the city of London, of 25 shillings in addition to the percentage paid for brokerage, before the processes of manufacture began, and the most of this money is actually paid out in wages.

Deponent says that in the above estimates he has given the bottom figures, and that the amount actually expended upon the skins in the city of London undoubtedly averages a larger sum. This would make on an average of 200,000 skins a year, which is not excessive, a total expenditure annually in the city of London of £250,000, minus the

amounts paid for cutting and making up in respect to the skins sent to the United States.

Deponent further says that the preservation of the seal herds and the continued supply of fur-seal skins, which furthermore, it is important should be constant and regular in supply, is absolutely necessary to the maintenance of this industry. Deponent says that the reason for this opinion is shown in the history of last season's business. For instance, at the October sale the prices of skins were very high, as a short supply was expected. The skins purchased at that sale were then put into the hands of the dressers and dyers, where they would be retained, as above stated, in process of treatment four or five months. During this interval it appeared that instead of there being a short supply the poaching vessels had caught a large number of skins, 50,000 or 60,000, which, being unexpectedly plumped on the market, brought the price down so that there was a loss of perhaps 25 shillings per skin on the skins bought at the October sales; and deponent further says that it is of course obvious that the business can not be maintained unless the herds are preserved from the destruction which has overtaken the South Sea herds, which formerly existed in such large numbers, and so important has the seal-skin business become that if the herds were exterminated deponent says it would hardly be worth while to remain in the fur business.

Deponent says while he does not wish to express any opinion upon the matters which are in controversy, that nevertheless, looking at the question of preserving the seals from a natural-history point of view alone, and having no regard whatever to the rights of any individuals or nations, but looking at the matter simply from the point of view of how best to preserve the seals, he has no hesitation in saying that the best way to accomplish that object would be to prohibit absolutely the killing of all seals except upon the islands, and furthermore to limit the killing of seals on the islands to the male species at particular times, and to limit the numbers of the males to be so killed. If, however, the rights of individuals are to be considered, and sealing in the open sea is to be allowed, then deponent thinks that the number of vessels to be sent out by each country ought to be limited, and the number of seals which may be caught by each vessel should be specified.

Deponent says that one reason why he thinks the killing of seals in the open sea should be prohibited, and all killing limited to the islands, is because deponent is of the opinion that when seals are killed in the open sea a large number must be killed which are not recovered, and consequently that the herds must suffer much greater loss than is measured by the skins of the seals caught or coming to market.

Deponent further says that one reason for this opinion is that he has had some small experience in shooting hair seals in the Scilly Islands, and has himself personally killed hair seals at a distance of 40 or 50 yards which sank before he could reach them. Hair seals are of the same general family as fur seals, and he has no doubt that the same thing occurs and must occur when the fur seals are killed on the open sea.

HERBERT SHELLEY BEVINGTON, M. A.

Deposition of Alfred Fraser, member of firm of C. M. Lampson & Co., furriers, London.

STATE OF NEW YORK,
City and County of New York, ss:

Alfred Fraser, being duly sworn, says:

(1) That he is a subject of Her Britannic Majesty and is 52 years of age and resides in the city of Brooklyn, in the State of New York. That he is a member of the firm of C. M. Lampson & Co., of London, and has been a member of said firm for about thirteen years; prior to that time he was in the employ of said firm and took an active part in the management of the business of said firm in London. That the business of C. M. Lampson & Co., is that of merchants, engaged principally in the business of selling fur skins on commission. That for about twenty-four years the firm of C. M. Lampson & Co. have sold the great majority of the whole number of seal skins sold in all the markets of the world. That while he was engaged in the management of the business of said firm in London he had personal knowledge of the character of the various seal skins sold by the said firm, from his personal inspection of the same in their warehouse and from the physical handling of the same by him. That many hundred thousands of the skins sold by C. M. Lampson & Co. have physically passed through his hands, and that since his residence in this country he has, as a member of said firm, had a general and detailed knowledge of the character and extent of the business of said firm, although since his residence in the city of New York he has not physically handled the skins disposed of by his firm.

That during the last year or two a large number of skins have been sold in London by the firm of Culverwell, Brooks & Co., and that said firm, as deponent is informed and believes, have secured the consignment of skins to them during the period aforesaid by advancing to the owners of vessels engaged in what is now known as pelagic sealing sums of money, which is stated to be $15 per skin, as against shipments from Victoria of such skins.

(2) That the seal skins which have been sold in London from time to time since deponent first began business have been obtained from sources and were known in the market as—

(*a*) The South Sea skins, being the skins of seals principally caught on the South Shetland Islands, South George Islands, and Sandwich Land. That many years ago large numbers of seals were caught upon these islands, but in consequence of the fact that no restrictions were imposed on the killing of said seals, they were practically exterminated, and no seal skins appeared in the market from those localities for many years. That about twenty years ago these islands were again visited, and for five seasons a considerable catch was made, amounting, during the whole five seasons, to about 30,000 or 40,000 skins. Among the skins found in this catch were those of the oldest males and the smallest pups, thus showing, in the judgment of deponent, that every seal of every kind was killed that could be reached. That in consequence thereof the rookeries on these islands were then completely exhausted. Once or twice thereafter they were visited without result, no seals being found, and about five years ago they were again revisited and only 36 skins were obtained. Deponent is informed that all the South Sea skins were obtained by killing seals upon the islands above mentioned, and that it is obviously everywhere much easier to kill seals upon the land than in the water; and, in the judgment of the deponent, the seals of the above-mentioned islands were thus entirely exterminated

because of the entire absence of any protection or of any restriction of any kind whatever upon the number, age, or sex of seals killed, and not merely, as deponent understands has been claimed by some authorities, because they were killed on land instead of in open sea, which moreover, in that locality, deponent is informed, is practically impossible, by reason of the roughness of the sea and weather.

(*b*) A considerable number of seal skins were formerly obtained upon the Falkland Islands; how many deponent is not able to state.

(*c*) That a certain number of seals were also caught at Cape Horn, and that more or less are still taken in that vicinity, though the whole number has been very greatly reduced.

(*d*) That at the present time and for many years last past the skins coming to the market and which are known to commerce have come from the following sources: By far the most important are the Northern Pacific skins, which are known to the trade under the following titles:

The Alaska catch, which are the skins of seals caught on the Pribilof Islands, situated in Bering Sea. For many years past the whole of the skins caught upon these islands have been sold by deponent's firm, and a statement of the number of skins so sold in each year is appended hereto and marked Exhibit A, showing the aggregate of such skins sold from the year 1870 to the year 1891, inclusive, as 1,877,977.

The Copper catch, being the skins of seals caught upon what are known as the Commander Islands, being the islands known as Copper and Bering islands. All the skins so caught have been sold by deponent's firm in the city of London, and the total number of such Copper catch from the year 1872 to 1892 appears upon the statement which is hereto annexed and marked Exhibit B, showing the total so sold during such years of 768,096 skins.

The Northwest catch, being the skins of seals caught in the open sea either of the Pacific Ocean or the Bering Sea. These skins were originally caught exclusively by the Indians and by residents of the colony of Victoria and along the coast of the British possessions. A statement of the total number of the catch from the year 1868 to 1884, inclusive, is appended hereto and marked Exhibit C, showing a total of 153,348. That statement is divided into three heads: First, the salted Northwest coast skins; second, the dried Northwest coast skins, both of which were mainly sold through deponent's firm in London; and third, salted Northwest coast skins, dressed and dyed in London, but not sold there. It will be noticed that in the years 1871 and 1872 an unusually large proportion of dried skins appeared to have been marketed. Those skins were purchased in this year from the American-Russian Company and sold when the Americans took possession. For the years 1871 and 1872, therefore, the surplus skins over the average for the other years should be rejected in a computation of the general average of seals killed during the years from 1868 to 1884, inclusive.

From the year 1885 to the year 1891 the number of skins included in the Northwest catch enormously increased, and a statement of such skins is hereto annexed and marked Exhibit D, showing a total of 331,962, and is divided, like the statement marked Exhibit C, into three heads: The salted Northwest coast skins, the dried Northwest coast skins, and the salted skins dressed and dyed in London but not sold there. The majority of the first two classes were, as in the previous case, sold by deponent's firm. The great majority of these skins appearing in the last-mentioned statement are the skins caught by vessels sent out from the Canadian provinces; many also by vessels sent out from San Francisco, Port Townsend, and Seattle, and a few from vessels sent out from Yokohama; the majority, however, are supposed to have

been caught by vessels sent out from British harbors. A large number of the skins included in Exhibit D have been consigned to C. M. Lampson & Co. by the firm of Herman Liebes & Co., of San Francisco. In estimating the total number of the Northwest catch it should also be mentioned that something like 30,000 skins belonging to that catch have been dressed and dyed in the United States, which have not gone to London at all.

(*e*) Besides the Alaska, Copper, and Northwest skins there are also a certain number of skins arriving in London known as the Lobos Island skins, although the same are not handled by the firm of C. M. Lampson & Co., but the total number of which, from the year 1872 to the year 1891, inclusive, is, as appears from the catalogues of sales, 247,777. The Lobos Island skins are those of seals killed on the Lobos Island, belonging to the Republic of Uruguay; and deponent is informed and believes that there is no open-sea sealing in the vicinity of such island, and that the animals are protected on the island as they are on the Russian and Pribilof islands, by prohibition from the killing of females and limiting the number of males killed in each year. A statement of the seals killed on Lobos Island is hereto annexed and marked Exhibit E, from which it appears that there is a regular annual supply obtained from that source, which shows no diminution.

(*f*) There are also a certain number of skins sold in London obtained from rookeries at or near the Cape of Good Hope, the exact number of which deponent is not able to state, but which, he is informed, shows a steady yield.

The statements marked A, B, C, D, and E, hereunto appended, have been carefully prepared by me personally, and the figures therein stated have been compiled by me from the several sale catalogues of C. M. Lampson & Co., and others from my private books which I kept during all the years covered by the statements, and I am sure that these statements are substantially accurate and truly state the respective numbers of the skins caught and sold which they purport to state.

(3) The great majority of the skins sold from the Northwest catch are the skins of female seals. Deponent is not able to state exactly what proportion of such skins are the skins of females, but estimates it to be at least 85 per cent, and the skins of females are readily distinguishable from those of the males by reason of the fact that on the breast and on the belly of the bearing female there is comparatively little fur, whereas on the skins of the male seals the fur is evenly distributed; and also by reason of the fact that the female seal has a narrow head and the male seal a broad head and neck; and the skins of this catch are also distinguishable from the Alaska and Copper catch by reason of the fact that seals are killed by bullets or buckshot or speared, and not, as on the Pribilof and Commander islands, by clubs. Marks of such bullets or buckshot or spears are clearly discernable in the skins, and there is a marked difference in the commercial value of the female skins and of the male skins. This fact, that the Northwest skins are so largely the skins of females, is further evidenced by the fact that in many of the early sales of such skins they are classified in deponent's books as the skins of females.

(4) Deponent further says, that in his judgment the absolute prohibition of pelagic sealing, i. e., the killing of seals in the open sea, whether in the North Pacific or the Bering Sea, is necessary to the preservation of the seal herds now surviving, by reason of the fact that most of the females so killed are heavy with young, and that necessarily the increase of the species is diminished by their killing. And further, from the fact that a large number of females are killed in the Bering Sea while on

the search for food after the birth of their young, and that in consequence thereof the pups die for want of nourishment. Deponent has no personal knowledge of the truth of this statement, but he has information in respect of the same from persons who have been on the Pribilof Islands, and he believes the same to be true. Deponent further says that this opinion is based upon the assumption that the present restriction imposed by Russia and the United States on the killing of seals on their respective islands are to be maintained, otherwise it would be necessary to impose such restrictions as well as to prohibit pelagic sealing in order to preserve the herds.

(5) Deponent is further of the opinion, from his long observation and handling of the skins of the several catches, that the skins of the Alaska and Copper catches are readily distinguishable from each other, and that the herds from which such skins are obtained do not in fact intermingle with each other, because the skins classified under the head of Copper catch are not found among the consignments of skins received from the Alaska catch, and vice versa.

(6) Deponent further says that the distinction between the skins of the several catches is so marked, that in his judgment he would, for instance, have had no difficulty had there been included among 100,000 skins in Alaska catch 1,000 skins of the Copper catch, in distinguishing the 1,000 Copper skins and separating them from the 99,000 Alaska skins, or that any other person with equal or less experience in the handling of skins would be equally able to distinguish them. And in the same way deponent thinks, from his own personal experience in handling skins, that he would have no difficulty whatever in separating the skins of the Northwest catch and the Alaska catch, by reason of the fact that they are the skins almost exclusively of females, and also that the fur upon the bearing female seals is much thinner than upon the skin of the male seals, the skin of the animal while pregnant being distended and the fur extended over a large area.

(7) Deponent says that the number of persons who are employed in the handling, dressing, dyeing, cutting, and manufacturing of seal skins in the city of London is about 2,000, many of whom are skilled laborers earning as high as £3 or £4 a week. Deponent estimates the amount paid in the city of London for wages in the preparation of fur-seal skins for a manufacturer's use, and excluding the wages of manufacturers' employees, prior to the beginning of the pelagic sealing in 1885, at about £100,000 per annum; and deponent further says that in his judgment if this pelagic sealing be not prohibited, it is but a question of a few years, probably not more than three, when the industry will cease by reason of the extermination of the seals in the same way in which they have been exterminated on the South Sea Islands, by reason of no restrictions being imposed upon their killing.

ALFRED FRASER.

EXHIBIT A.

Salted Alaska fur seal skins sold in London.

Year.	Skins.	Year.	Skins.	Year.	Skins.	Year.	Skins.	Year.	Skins.
1870	9,965	1875	99,634	1880	100,161	1885	99,719	1890	20,994
1871	100,896	1876	90,267	1881	99,921	1886	99,910		a 4,158
1872	96,283	1877	75,410	1882	100,100	1887	99,940	1891	13,473
1873	101,248	1878	99,911	1883	75,914	1888	100,000		
1874	90,150	1879	100,036	1884	99,887	1889	100,000	Total	1,877,977

a Food skins.

EXHIBIT B.

Salted Copper Island fur-seal skins sold in London.

Year.	Skins.	Year.	Skins.	Year.	Skins.	Year.	Skins.	Year.	Skins.
1872	7,182	1877	25,380	1882	39,111	1887	54,584	1892	30,678
1873	21,614	1878	19,000	1883	36,500	1888	46,333		
1874	30,349	1879	28,211	1884	26,675	1889	47,416	Total	768,096
1875	34,479	1880	38,885	1885	48,929	1890	95,486		
1876	33,298	1881	45,209	1886	41,752	1891	17,025		

EXHIBIT C.

Salted Northwest coast fur-seal skins sold in London prior to pelagic sealing in Bering Sea.

Year.	Skins.	Year.	Skins.	Year.	Skins.	Year.	Skins.	Year.	Skins.
1872	1,029	1875	1,646	1878	264	1881	9,997	1884	9,242
1873	.....	1876	2,042	1879	12,212	1882	11,717		
1874	4,949	1877	.....	1880	8,939	1883	2,319	Total	64,366

Salted Northwest coast fur-seal skins dressed and dyed in London (but not sold there) taken prior to pelagic sealing in Bering Sea.

Year.	Skins.	Year.	Skins.	Year.	Skins.	Year.	Skins.	Year.	Skins.
1872	699	1875	578	1878	2,434	1881	5,890	1884	9,242
1873	40	1876	1,062	1879	2,397	1882	11,727		
1874	122	1877	772	1880	4,562	1883	2,319	Total	46,215

Dry Southwest coast fur-seal skins sold in London prior to pelagic sealing in Bering Sea.

Year.	Skins.	Year.	Skins.	Year.	Skins.	Year.	Skins.	Year.	Skins.
1868	2,141	1872	14,584	1876	993	1880	.....	1884	785
1869	1,671	1873	891	1877	1,173	1881	686		
1870	684	1874	2,772	1878	912	1882	321	Total	42,767
1871	12,495	1875	1,351	1879	918	1883	390		

Of the skins sold in 1871 and 1872 a very large proportion were the accumulation of the Russian-American Company, and sold by them after the purchase of Alaska by the United States.

RECAPITULATION.

	Years.	Skins.
Salted skins sold in London	1872–1884	64,366
Salted skins dressed and dyed in London	1872–1884	46,215
Dry skins sold in London	1868–1884	42,767
Grand total	.....	153,348

EXHIBIT D.

Dry Northwest coast fur-seal skins sold in London after commencement of pelagic sealing in Bering Sea.

Year.	Skins.	Year.	Skins.	Year.	Skins.
1885	1,520	1888	1,252	1891	1,063
1886	979	1889	228		
1887	2,843	1890	699	Total	8,604

Salted Northwest coast fur-seal skins dressed and dyed in London (but not sold there) taken after the commencement of pelagic sealing in Bering Sea.

Year.	Skins.	Year.	Skins.
1885	16,667	1889	2,017
1886	15,087		
1887	3,589	Total	39,290
1888	1,930		

In addition to above, it is estimated that from 25,000 to 30,000 skins have been dressed and dyed in the United States.—E. T. R., jr., notary public.

Salted Northwest coast fur-seal skins sold in London after commencement of pelagic sealing in Bering Sea.

Year.	Skins.	Year.	Skins.
1885	2,078	1890	38,315
1886	17,909	1891	54,180
1887	36,907	1892	28,298
1888	36,818		
1889	39,563	Total	254,068

RECAPITULATION.

	Years.	Skins.
Dry skins sold in London	1885–1891	8,604
Salted skins dressed and dyed in London, but not sold there	1885–1889	39,290
Salted skins dressed and dyed in United States, estimated	1885–1889	30,000
Salted skins sold in London	1885–1892	254,068
Grand total		331,962

EXHIBIT E.

Salted Lobos Island fur-seal skins sold in London.

Year.	Skins.	Year.	Skins.	Year.	Skins.
1873	6,956	1881	13,569	1889	8,755
1874	8,509	1882	13,200	1890	18,541
1875	8,179	1883	12,861	1891	15,834
1876	11,353	1884	16,258	1892 *a*	4,800
1877	13,066	1885	10,953		
1878	12,301	1886	13,667	Total	247,777
1879	12,295	1887	11,068		
1880	14,865	1888	20,747		

a To date.

Additional deposition of Alfred Fraser, member of the firm of C. M. Lampson & Co., furriers, London.

STATE OF NEW YORK,
City and County of New York, ss:

Alfred Fraser, being duly sworn, says: I am a member of the firm of C. M. Lampson & Co., of London, and the person described in and who verified an affidavit on the 1st day of April, 1892, relating to the fur-seal industry. The tables hereto annexed, marked A, B, C, D, E, and F, have been prepared by me from the printed catalogues of public auc-

tion sales in London of fur-seal skins, and also from my private memoranda, and from knowledge and information of the fur-seal industry, I believe them to be correct in every particular. Said tables state all of the salted fur-seal skins of the Alaska, Copper, Northwest coast, and Lobos catches, which, according to the said catalogues and memoranda, were sold at public auction in London between the years 1868 and 1891, together with the average price per skin obtained during each of said years for the aforesaid skins.

ALFRED FRASER.

EXHIBIT A.

Salted Alaska fur-seal skins sold in London from 1870 to 1891.

Year.	Skins.	Year.	Skins.	Year.	Skins.	Year.	Skins.	Year.	Skins.
1870	9,965	1875	99,634	1880	100,161	1885	99,719	1890	20,994
1871	100,896	1876	90,267	1881	99,921	1886	99,910		4,158
1872	96,283	1877	75,410	1882	100,100	1887	99,940	1891	13,473
1873	101,248	1878	99,911	1883	75,914	1888	100,000		
1874	90,150	1879	100,036	1884	99,887	1889	100,000	Total	1,877,977

EXHIBIT B.

Salted Copper Island fur-seal skins sold in London in the years 1870 to 1892.

Year.	Skins.	Year.	Skins.	Year.	Skins.	Year.	Skins.	Year.	Skins.
1870	12,030	1875	34,479	1880	38,885	1885	48,929	1890	95,486
1871	9,522	1876	33,298	1881	45,209	1886	41,752	1891	17,025
1872	7,182	1877	25,380	1882	39,111	1887	54,584	1892	30,678
1873	21,614	1878	19,000	1883	36,500	1888	46,333		
1874	30,349	1879	28,211	1884	26,675	1889	47,416	Total	789,648

EXHIBIT C.

Salted Northwest coast fur-seal skins sold in London prior to pelagic sealing in Bering Sea.

Year.	Skins.	Year.	Skins.	Year.	Skins.	Year.	Skins.	Year.	Skins.
1872	1,029	1875	1,646	1878	264	1881	9,997	1884	9,242
1873	.....	1876	2,042	1879	12,212	1882	11,717		
1874	4,949	1877	.....	1880	8,939	1883	2,319	Total	64,366

EXHIBIT D.

Salted Northwest coast fur-seal skins sold in London after commencement of pelagic sealing in Bering Sea.

Year.	Skins.	Year.	Skins.
1885	2,078	1890	38,315
1886	17,909	1891	54,180
1887	36,907	1892 *a*	28,298
1888	36,818		
1889	39,563	Total	254,068

a To March 25.

EXHIBIT E.

Salted Lobos Island fur-seal skins sold in London.

Year.	Skins.	Year.	Skins.	Year.	Skins.
1873	6,596	1881	13,569	1889	8,755
1874	8,509	1882	13,200	1890	18,541
1875	8,179	1883	12,861	1891	15,834
1876	11,353	1884	16,258	1892 *a*	4,800
1877	13,066	1885	10,953		
1878	12,301	1886	13,667	Total	247,777
1879	12,295	1887	11,068		
1880	14,865	1888	20,747		

a To date.

EXHIBIT F.

Salted Alaska fur-seal skins sold in London in the years 1868–1871 taken prior to the leasing of the Pribilof Islands.

Year.	Skins.	Year.	Skins.
1868	28,220	1871	20,111
1869	121,820		
1870	110,511	Total	280,662

The following table, prepared by Hutchinson, Kohl, Philipeus & Co., of San Francisco, lessees of the right to take fur seals upon the Commander and Robben islands, shows the number of seal skins secured annually from these respective islands from 1871 to 1891:

Year.	Commander Islands.	Robben Island.	Total.	Year.	Commander Islands.	Robben Island.	Total.
1871	3,614		3,614	1883	26,650	2,049	28,699
1872	29,356		29,356	1884	49,444	3,819	53,263
1873	27,710	2,694	30,404	1885	41,737	1,838	43,575
1874	28,886	2,414	31,300	1886	54,591		54,591
1875	33,152	3,127	36,279	1887	46,347		46,347
1876	25,432	1,528	26,960	1888	47,362		47,362
1877	18,584	2,949	21,533	1889	52,859		52,859
1878	28,198	3,142	31,340	1890	53,780		53,780
1879	38,749	4,002	42,750	1891	5,800		5,800
1880	45,174	3,330	48,504				
1881	39,314	4,207	43,521	Total			776,467
1882	40,514	4,106	44,620				

Table of annual seal-skin supply compiled from table of London trade sales as given by Emil Teichmann.

Year.	Lobos Island.	Cape Horn.	Northwest catch.	Alaska catch.	Copper catch.	Total.
1870			684	9,965		10,649
1871			12,495	100,896		113,391
1872			16,303	96,283	7,182	119,768
1873	6,956		981	101,248	21,614	130,749
1874	8,507		7,843	90,150	30,349	136,851
1875	8,179		3,575	99,634	34,497	145,867
1876	11,353	6,306	4,097	90,267	33,298	145,321
1877	13,066	7,631	1,945	75,410	25,380	123,432
1878	12,301	18,227	3,607	99,911	19,000	143,046
1879	12,295	12,180	15,527	100,036	28,211	168,249
1880	14,386	17,562	13,501	100,161	38,885	184,945
1881	13,569	13,164	16,573	9,994	45,209	188,436
1882	13,200	11,711	23,207	100,100	39,111	187,329
1883	12,861	4,655	9,544	75,914	36,500	139,474
1884	16,258	6,743	20,142	99,887	26,657	169,705
1885	10,953	3,404	20,265	99,719	48,929	183,270
1886	13,667	909	33,975	99,910	41,752	190,213
1887	11,068	2,762	43,339	99,940	54,584	211,693
1888	20,747	4,403	40,000	100,000	46,333	211,483
1889	8,755	3,021	41,808	100,000	47,416	201,000

Table of percentages of annual seal-skin supply compiled from table of London trade sales as given by Emil Teichmann.

Year.	Lobos Island.	Cape Horn.	Northwest catch.	Alaska catch.	Copper catch.	Total.
1870	.....	.....	0.0620	0.9380	.....	1.0000
1871	.....	.....	.110	.890	.....	1.0000
1872	.....	.....	.136	.8047	0.051	1.0000
1873	.....	.....	.1362	.7743	.050	1.0000
1874	0.0532	.....	.0072	.6830	.1653	1.0000
1875	.0560	.....	.0246	.6204	.2364	1.0000
1876	.0782	0.0440	.0282	.6113	.2143	1.0000
1877	.1054	.0618	.0158	.698	.2578	1.0000
1878	.0831	.0575	.00251	.5944	.1363	1.0000
1879	.0730	.0722	.0927	.813	.1677	1.0000
1880	.0804	.0946	.0730	.5417	.2103	1.0000
1881	.0720	.0697	.0625	.5307	.2451	1.0000
1882	.0703	.0624	.1233	.5343	.2097	1.0000
1883	.0923	.0384	.0685	.5442	.2616	1.0000
1884	.0950	.0332	.1187	.5821	.1631	1.0000
1885	.5540	.0196	.113	.5447	.2684	1.0000
1886	.0718	.0047	.1795	.5307	.2143	1.0000
1887	.0521	.0133	.2047	.4721	.2578	1.0000
1888	.0981	.0207	.1894	.4728	.2190	1.0000
1889	.0435	.0156	.2075	.4975	.2359	1.0000

CRUISE OF THE LOUIS OLSEN IN THE BERING SEA.

BY A. B. ALEXANDER.

On the 25th of May, at Seattle, I met Capt. E. P. Miner, master of the American sealing schooner *Harry Dennis*, who, on the same day, had arrived from Japan, his vessel having been wrecked on that coast. At the time of meeting him he was endeavoring to charter another vessel, and hoped to be in the Bering Sea by the 1st of August. Informing him that the United States Commissioner of Fish and Fisheries was anxious that I should make a cruise with him should he succeed in getting a suitable vessel, he freely consented, and informed me that if he found out in time he would let me know by mail.

On the morning of the 28th I sailed in the *City of Topeka* for Sitka, and from there took passage in the *Crescent City* for Unalaska. Soon after arriving there I joined the *Albatross*, and remained by her until the evening of the 29th of July, when I joined the sealing schooner *Louis Olsen*, of Astoria, Oreg., Captain Guillams, master, who did not for a moment hesitate about giving me a passage. My reason for joining the *Olsen* was on account of not having heard from Captain Miner as to whether he had succeeded in obtaining a vessel; I was also informed by several sealing captains that he did not get a vessel, and in consequence would not be in the sea. The time having arrived when pelagic sealing was about to commence, I was glad to accept, as I thought, the only opportunity which would be offered for the season.

The next day, in latitude 54° 38′ north, longitude 167° 04′ west, we saw our first seals, 20 in number, 12 of which were "sleepers." Seals when sleeping are by sealers always called by the above name. In the afternoon we saw 6 seals about half a mile from the vessel playing in a bunch of seaweed. The sea at the time was perfectly smooth with a light air stirring. Two hunters and myself started out in a boat to watch them and see how near we could approach without disturbing them. We soon learned that they were unusually tame, as we approached near enough to touch one with a spear pole which was in the boat. They showed little signs of fear, notwithstanding that we were within 30 feet of them for fully five minutes. Diving under the seaweed and sud-

denly thrusting their heads up through it seemed to afford them great pleasure. Rolling over and over in the seaweed, their flippers becoming tangled in it, was also a pleasant enjoyment. They paid but little attention to us and seemed almost indifferent as to how near we approached so long as we did so quietly. This caused the hunters to exclaim several times, "If we only had a gun we could kill them all." Under the circumstances it was but natural that a gun should be the uppermost thought in their minds.

Early in the spring, both on the Northwest coast and off the coast of Japan, seals are sometimes found which evince little signs of fear, but after one day's shooting on the ground they become very wild and mistrustful, and, like a crow and some land animals, seem to scent a gun in the air. On this particular occasion a kodak camera would have given good results—it was one opportunity of a thousand.

The following day, 31st, seals were plentiful. The wind being light during the previous night, our position had changed but little.

On August 1, at a very early hour, the spears were brought forth and the seal on them broken. While this was going on many remarks were made in regard to the first day's trial. Some of the hunters were already discouraged and were confident that they were only wasting time by attempting to use spears; the thought of being obliged to adopt the primitive weapon of the Siwash was indeed humiliating to them. A few on board felt more hopeful and were willing to give the spear a fair trial. Ever since leaving Unalaska the hunters had been practicing at throwing the spear pole. Every piece of floating seaweed or other object which came within range had been a target. On several occasions the boats had been lowered and a supply of chips and small pieces of wood taken along. These were thrown ahead of the boat as targets to throw at. It was soon found that an object that could be easily hit at a distance of 25 or 30 feet from the vessel was not so easily reached from a boat, as the smallest wave would cause her to move just enough to cause the pole to go wide of its mark. A day's practice throwing from the boats had the effect of teaching the hunters the various ways of holding the spear to make more sure of its hitting the mark under the many conditions of sea and wind. All this time spear throwing had been carried on with lifeless objects for a mark. The opportunity was about to present itself to exhibit skill in throwing at something that if missed the first time would not be likely to remain stationary long enough to give the marksman another trial. A cool head and steady nerves would be the special requirements to insure a successful day's hunt should seals be plentiful.

The 1st day of August did not prove a success, so far as sealing was concerned, the weather being too foggy to send out the boats. Scattering seals were observed all day, but they were all "travelers;" that is, they were all moving in various directions. Our noon position was latitude 56° 11′ north, longitude 172° 01′ west. The next day seals were less numerous. None were observed in the forenoon; in the afternoon 12 were seen; all but one were traveling to the westward. This individual was asleep; a boat was quickly lowered and the hunter on watch was rowed toward it. Before the boat had covered half the distance the seal showed signs of waking, and shortly after, becoming aware of approaching danger, it disappeared. Our noon position on this day was latitude 57° 21′ north, longitude 173° 46′ west. Seals here were not so plentiful as they were farther south. In the afternoon we hove to and caught two cod in 65 fathoms of water. No more seal life was observed until the afternoon of the following day, when two sleep-

ing seals were sighted, latitude 57° 50′ north, longitude 173° 48′ west. Five boats were sent out. They returned at 5 p. m., having taken no seals, although 8 had been seen, but they were all "travelers." Heavy fog and strong indications of the wind breezing up fresh caused the boats to return earlier than they otherwise would. In the evening, the vessel being hove to, several seals came close alongside. They seemed to be very curious to know what we were. All the spears on board were repeatedly thrown at them, but they had the good sense to keep just out of range. Whistling had the effect of enticing them close aboard, but the sight of a spear or two being aimed at them would cause them, without any apparent effort, to increase their distance by 20 or more feet.

The first seal captured by the *Olsen* was on August 4, in latitude 57° 50′ north, longitude 173° 48′ west, the same position recorded on the previous day. At 8.45 a. m. sail was made, and at 10.45 the boats were lowered, two "sleepers" having been seen. The weather being foggy the boats were soon lost to sight. The vessel was hove to, it being much easier for the boats to keep the bearing of the vessel than for the vessel to keep track of the boats.

As soon as the boats had left a hand line was put over in 70 fathoms of water. An hour's fishing resulted in 18 cod. Their average weight, as near as could be judged, was 12 pounds; the largest weighed not far from 30 pounds. All but two of the cod were in a healthy condition. These two had sores on their backs about the size of a half dollar, which had eaten nearly to the backbone. This instance is mentioned here on account of the part of the fish where the sores were. In both cases they were situated near the neck, directly over the vertebra; they were as round and smooth as if cut with a knife.

Notwithstanding that the fog did not lift during the day, the boats remained out until 9 p. m. The result of the day's hunt was 12 seals—4 males and 8 females. One of the seals had previously been speared in one of its flippers, as it was nearly severed from its body, showing that the seal must have had a hard struggle to free itself. The largest number of seals caught for this first day's successful hunt was taken by two boats, they bringing in five each; two other boats captured one each, and the remaining two boats brought in nothing. The hunters in these boats, on learning that 12 seals had been captured, indulged in strong language at their nonsuccess.

About 50 seals had been observed from the boats, the most of which were awake. Only an occasional individual had been seen during the day from the vessel, the fog being too dense to see more than an eighth of a mile.

In no single instance was the first seal speared at captured; it was only after repeated attempts by each hunter that one was hit. The excitement caused by the desire on the part of each to be the first to capture a seal, combined with the inexperience of throwing the primitive weapon, was no doubt the chief cause of the poor results. The eight females captured were all nursing seals; but little food was found in their stomachs, and that was too much digested to tell what it consisted of; it was, however, placed in alcohol.

In the evening, after the seals had been skinned and everything made snug for the night, each hunter told his experience during the day, which, as may be supposed, was more entertaining than instructive.

On the 5th the wind and weather were not suitable for sealing; a very fresh southeast wind prevailed, and in order to keep our present position the vessel was hove to under easy sail. A large number of

seals was noticed; they were frequently seen playing about, sometimes on the crest of a wave, and then in the hollow of a sea. They seemingly had no fixed course, but would swim in one direction a half a mile or so, return and go in an opposite way. It is more than likely, had the wind been blowing a strong gale, they would all have been bound in one direction. The wind continued fresh, with a rough, choppy sea, until the following noon, when the fog which had come in during the night lifted and the wind suddenly subsided into a calm. The boats were put in readiness and sent out for an afternoon's hunt. Considering the state of the sea and the time of starting, a fair afternoon's work was done, 19 seals being landed on deck by 8.30 p. m. Fifteen of the number were cows and 4 males. Only 6 had food in their stomachs. Every hunter reported seals numerous, about half of the number being asleep. They slept in bunches of 6 and 8, and when aroused from their slumber were very tame, but owing to the inexperience of the hunters with spears in a comparatively rough sea, the successful throws were few and far between. Had the hunters been provided with shotguns instead of spears, it is pretty safe to say that a hundred or more seals would have been nearer the day's catch. To be compelled to see seals escape that could easily have been killed with a shotgun brought forth from both hunters and boat crews loud and imprecatory language upon the heads of all those who were instrumental in prohibiting the use of firearms in the Bering Sea. These men had not been used to seeing their prey get away so easily, and to them the sight was more than exasperating. During the absence of the boats a large number of traveling seals had been seen from the vessel and also an occasional "sleeper." One of the latter was observed close aboard a little on our lee. It evidently was sleeping soundly, for neither the slatting of the sails nor the blowing of the fog horn had the effect of awaking it, and it was only when the scent of the vessel reached its nostrils that it showed signs of life. After being fully aroused it did not exhibit any great signs of alarm, but played about not far off for some time. It seldom happens that a seal will show such indifference to its surroundings as this one. The captain and mate said they had never in all their experience seen a seal so tame. The general opinion on board was that it was due to there being no firearms used or hunting allowed in the Bering Sea for the past few years that caused the seals thus far observed to show so little fear of man.

The highest catch for any one single day was taken on the 7th. The day commenced with a gentle breeze from the south, and a smooth sea. A light fog hung low over the water which prevented the boats from being seen more than 20 yards. At 8 a. m. the last boat shoved off, and they were not seen again until evening. Noon position: Latitude, 58° 30′ north; longitude, 173° 56′ west. In the forenoon hand-line fishing was carried on. The depth of water here was 60 fathoms. Six good-sized cod were caught in quick succession; 2 males and 4 females. Their stomachs were well filled with food. In the stomach of a large female was found an octopus; it had been recently swallowed, as its skin showed no discoloration. Cod were abundant; we could have filled the decks in a day's fishing with a single line. The abundance of cod may have been the cause of seals being plentiful in this region. In the evening the boats all returned nearly at the same time, bringing in 34 seals, 30 of which were females. Twenty-four of the number had food in their stomachs. The material, however, was finely masticated, and hard to identify, but a portion of it looked very much like the flesh of cod. If a portion of the food was cod, the question arises, did the seals

dive to the bottom in 60 fathoms of water and bring their prey to the surface? As a rule cod are found very close to the bottom, especially in deep water; in shallow places they are sometimes found nearer the surface. It is not probable that seals in this region found an abundance of cod or even scattering ones near the surface. Just how deep a seal can dive and secure food is a mooted question. Mr. Henry Elliott gives them credit of being able to dive to profound depths. The writer has conversed with a good many sealers on the subject, but has never been able to gather any reliable information. Sealers as a rule are not a very observing class of men, for the reason that their interest is all centered in the commercial side of the question, and think little of the habits or other peculiarities of seal life. The most satisfactory evidence the writer ever had that seals are deep divers was two years ago on the Fairweather Ground, a large bank off the coast of Alaska, while on a cruise in the revenue-cutter *Corwin*. We were about to return to the ship at the end of a successful afternoon's hunt, when a large bull suddenly came up close to our canoe, not over 30 feet away, with a very large red rockfish in its mouth, which it immediately proceeded to devour. The fish was alive and could be plainly seen struggling in the seal's mouth. Our position at the time was some 75 or 80 miles offshore from Yakutat Bay. We had no means of ascertaining the depth of the water, but it could not have been much less than 100 fathoms. Red rockfish is also a species that generally swims close to the bottom, although like cod it is possible that they sometimes feed near the surface. The writer does not maintain that seals can go to the bottom in 100 fathoms of water, but thinks they can dive much deeper than is generally supposed.

All the hunters on this day reported seals plentiful, but could find very few asleep. Had the sun been shining it is safe to say that the majority of those with food in their stomachs would have slept during a greater part of the day, for, as a rule, seals with full stomachs sleep when the sun is out, the air warm, and the sea smooth or comparatively so. Their time of sleeping, however, is not always when conditions are favorable, for after a gale of long duration they are frequently seen asleep when the air is cold and the sea uncommonly high. At such times seals are completely exhausted. It is not an infrequent sight during the winter and spring months, at the end of a long and heavy gale, to see seals sleeping soundly in a snowstorm, with that portion of the body out of the water covered with snow. In consequence of the seals on this day being restless, a great many of the 34 taken were what is known to sealers as "finners," that is, seals about half asleep, rolling about and scratching themselves. Sometimes "finners" are hard to approach, and at other times very easy. A restless one will try very hard to take a nap, but just as he gets comfortably fixed something disturbs him; holding its head up he will take a look all around, as if danger was scented in the air. These are hard to capture with spears.

Indians seldom pay any attention to moving seals when hunting with spears; they think it a waste of time. White hunters, when they can find no sleeping seals, frequently give chase to "finners" and "travelers," and in many cases are rewarded for their trouble. The hunters on the *Olsen* soon found that few seals would be taken on certain days if they only selected sleeping ones. Many haphazard throws were made at swimming and finning seals, the majority of which were failures, but enough good shots were made to make the experiment a paying one.

For several days seals had been observed chasing some kind of fish,

and during this last day's hunt they were quite plentiful. Only a single individual would be seen; it would dart first in one direction and then in another, and occasionally would make a desperate leap out of water. Presently a seal would be noticed not far off swimming as rapidly and in as many different directions as the fish. On the day in question, two seals were speared, just as they came to the surface, each with one of these fish in its mouth. The seals did not relinquish their hold when speared, but kept a firm grip until knocked on the head. The specimens proved to be Alaskan pollock. In both cases the specimens of fish secured were brought up by large males; one was somewhere between 8 and 10 years of age.

The two following days, 8th and 9th, the weather was too boisterous for sealing; wind southeast and every indication of a gale. We lay to under the foresail in order to keep as near our present position as possible. A heavy sea set in from the westward, but the wind did not increase above a strong breeze. Scattering seals were about each day, all traveling to the westward. From observation we learned that during stormy weather seals traveled in an opposite direction to the wind. In a gale it will be found that seals are far more numerous on the lee side of the Pribilof Islands than to the windward of them. When the wind is heavy and the sea rough seals as a rule travel from the seal islands directly to leeward or nearly so. Just how much the wind changes the course of the main body of seals would be hard to say, but so far as our investigations extended, in connection with the traveling herd which came under our notice, we are inclined to think that seals within 100 miles of the seal islands, bound to the feeding grounds, will in most cases seek the grounds to the leeward of the group. Seals in a gale take every advantage of wind and sea. It is necessary that they should, for there is evidently a limit to their endurance.

On the morning of the 10th light winds prevailed, but a choppy sea, combined with a long rolling swell from the west-southwest, rendered it unfit for sealing, although scattering seals had been noticed. Two days of idleness had made everybody on board anxious to get out in the boats. In the afternoon the wind fell to a calm, and the boats were put over in latitude 58° 27′ north, longitude 172° 46′ west, and remained out until evening, bringing in only three seals. Very few were seen from the boats, although they covered considerable ground during the day. Seals were equally scarce in the vicinity of the vessel; only six were observed. One of these, more bold than the rest, kept circling around the vessel, coming nearer each time. Finding that it was inclined to be inquisitive, it was encouraged to make further investigations as to what we were by continual whistling by those on board. It was finally enticed alongside and captured, the spear passing through one of its hind flippers. A series of photographs showing all the different positions the seal was in during its struggle for liberty would have been valuable. It fought bravely for life while in the water, but on being hauled on board its power was greatly lessened. It did not, however, give up without a desperate struggle to regain its liberty. At one period of the fight it drove everybody from the main deck, and it was only when a noose was thrown over its neck and its head hauled down to a ring bolt that terms of peace could be made, which was by knocking in on the head. The catch of seals for the day was 4—3 females and 1 male; the total catch to date 69—13 males and 56 females.

The next day (11th) the boats made an early start. Everything looked favorable for a good day's hunt, the wind being light and the sea smooth, two things which are almost indispensable in seal hunting.

No seals had been noticed during the morning, but it does not necessarily follow that because none are observed from the vessel they are not about, for frequently it happens that good catches are made when not a seal has been seen from the vessel. This was not one of those exceptional days; 13 was the catch—3 males and 10 cows. Seals had been comparatively plentiful, but were not inclined to sleep and were too wild to approach. A piece of an Alaskan pollock was brought in by one of the hunters, it having been taken from a seal's mouth in the same manner as the two others previously described. The shape of an Alaskan pollock would indicate it to be a fish that could easily escape from a seal. It may be, however, that seals do not select a single fish, but give chase to a body of them after the manner of whales, swordfish, and sharks, and out of many succeed in capturing one or more. The reason for seals seen on this day being so wild could be accounted for only in one way, they having had little to eat. The stomachs of those taken fully corroborated this theory. A series of trials were made for bottom fish, but with negative results; we seemed to be drifting over barren ground. The noon position on this day was 57° 42′ 38″ north latitude; 172° 52′ west longitude.

Our pleasant weather was about to be broken for a considerable length of time, for on the 12th the day began with a gale from the southeast, accompanied by a heavy sea. Lay hove to under single-reefed foresail and trysail. In the afternoon spoke with the schooner *Teresa*, of San Francisco; also saw the schooner *Kate*, of Victoria, British Columbia, a short distance away. Seals frequently seen all through the day. In the early part of the night the wind increased to a heavy gale, and i the latter part the wind decreased in force and hauled to the west-southwest. A heavy sea kept up all day. In the forenoon a vessel was sighted low on the horizon. An occasional seal observed; phalaropes numerous.

August 14: Weather pleasant, but wind fresh from the westward. In the evening boarded the schooner *Fawn*, of Victoria, British Columbia. She reported losing a boat and three men on the 11th. (They were afterwards picked up.) The *Fawn* had an Indian crew and had taken 20 skins in the sea. This news gave our hunters considerable encouragement. Position, latitude 57° 37′ north; longitude 173° 14′ west.

August 15: Pleasant weather in the early part of the day, but very squally in the latter part; sea rough. Latitude 57° 11′ north; longitude 173° 09′ west.

August 16: Variable weather; clear in the morning, thick and squally in the afternoon; sea very rough. But few seals seen. Noon position, latitude 57° 04′ north; longitude 172° 30′ west.

August 17: At 7 a. m. made sail and ran to the southward; wind northwest and fresh, gradually decreasing to a light breeze in afternoon. A heavy fog came in later in the day. Position, latitude 56° 54′ north; longitude 172° 45′ west. Continued on our course until 8 a. m. the next day, at which time saw a seal "finning" close by. A boat was quickly manned and started in pursuit, but the seal was on the alert and soon increased the distance between itself and enemy. Shortly after this a "sleeper" was noticed not far off on the weather bow. Another boat was hoisted out, which was silently rowed toward the coveted prize. No attempt was made by the hunter to throw the spear until the boat was within 20 feet of it. It was easily captured. When opened its stomach was found to be well filled with food, which no doubt was the cause of its sleeping so soundly.

Later in the day all the boats went out, but returned at the end of three hours with only one seal. The sea was smooth and but little wind stirring, but the air grew suddenly chilly and the sky very cloudy, which practically put an end to the chances of seals sleeping for the day. On this particular occasion the hunters were very much disgusted on account of not having shotguns. They claimed that with guns the day's catch at the least calculation would have been between 60 and 70 seals, instead of the small number of two. On a day like this, when seals showed no inclination to sleep, shotguns in the hands of skillful hunters would have done very destructive work to the seal herd, for experienced hunters kill nearly if not quite as many traveling seals during the course of a season as sleeping ones. In the early history of pelagic sealing hunters sought sleeping seals only, but they have learned the movements of the seal so thoroughly that traveling and finning seals are almost as desirable as sleeping ones.

Hand-line fishing was carried on from the vessel in 60 fathoms of water. In one hour 10 cod were caught, their average weight being about 9 pounds. It was estimated that the largest would weigh 30 pounds, the smallest 4 pounds. In their stomachs were found small starfish, prawns, squid, medusæ, and a quantity of decomposed fish, all of which was saved.

Unfortunately this was our last day's hunt. From this time on we had stormy weather and heavy gales. Eighty-four seals had been taken, 16 males and 68 females. All the females were nursing cows, except one, which was a yearling. The last seal caught by the *Olsen* was taken in latitude 56° 05′ north, longitude 172° 17′ west.

Early in the morning of the 19th the weather was pleasant, with indications of its being a suitable day for sealing, but shortly after the wind began to freshen from the southeast, gradually increasing in force and hauling to the westward. Lay to under a double-reefed foresail; heavy squalls at times. Noon position, latitude 55° 39′ north, longitude 172° 12′ west.

August 20: Heavy gale from the northwest; very high sea running. Ran before the wind for three hours, hoping to run out of the heaviest part of the gale, but no perceptible difference was felt. Lay hove to until 10 p. m., at which time again kept off before the wind and ran until 10 a. m. the next day. About this time saw several seals, and soon after ran close to a bunch of seals, five in number, all huddled together. It was evident that they were well tired out, or else they would not have been asleep in such weather. Position, latitude 54° 38′ north, longitude 168° 01′ west. In the afternoon sighted several vessels.

On the 22d bore away for Unimak Pass; wind north-northwest and blowing a gale, followed by a heavy sea. On the morning of the 23d sighted the lower part of Akutan Island, the top of it being enveloped in a heavy fog. All through the day seals were plentiful, many of which were asleep. During the past few days enough seals had been seen to cause a vessel to lay by and wait until the weather should moderate. The captain thought that bad weather had set in for the fall, and accordingly had made up his mind to go home. A mistake was made in this decision, for after we had left the sea and were on our way home good catches were being made by all the vessels that remained.

At 6 o'clock in the evening we had left Unimak Pass behind us, and were standing on an east by south course. The next day, when about 75 miles from the pass, saw a sleeping seal, and 10 miles farther on saw two more. When about 200 miles offshore salmon were noticed jump-

ing. They were so near that we could hardly mistake the species. Whales were also plentiful.

For the first two or three days after leaving the sea the weather was pleasant, but during the greater part of the voyage home heavy gales from the westward prevailed, which made the captain all the more confident that no mistake had been made by leaving so early.

On the evening of the 6th of September we arrived at Victoria, having been twelve days on the voyage home.

The writer was very kindly treated by the captain, officers, and crew of the *Olsen*, every effort being made by them to lend assistance and collect such material as was desired. Had the *Olsen* been among seals under favorable circumstances, as many vessels were, the writer could, with the assistance of the kindly disposed crew, have gathered considerable material; but we were one of the unfortunate ones. It was subsequently learned that during the time we were having exceedingly stormy weather—often hove to in a gale—many vessels of the fleet that were several degrees farther south were having pleasant weather and getting good catches every day.

Seals taken in the Bering Sea by the schooner Louis Olsen, 1894.

Date.	Position.						Number.	Male.	Female.
	North latitude.			West longitude.					
	°	′	″	°	′	″			
Aug. 4	57	50	00	173	48	00	12	4	8
6	58	30	00	173	56	00	19	4	15
7	58	30	00	173	56	00	34	4	30
10	58	27	00	172	46	00	4	1	3
11	57	42	38	172	52	00	13	3	10
18	56	05	00	172	17	00	2	.....	2
Total	.....			.....			84	16	68

[Statistics compiled by H. H. McIntyre, 1889.]

Seal skins landed at Victoria from Bering Sea, as shown by the Victoria custom-house records.

Schooner.	1881.	1882.	1883.	1884.	1885.	1886.	1887.?	1888.	1889.
San Diego (American)	193	327	908	980	1,726	.....	1,187	.....	.....
Alex. and Otter (American)	.....	.....	.....	1,700	.....	.....	.....	.....	.....
Mary Ellen (British)	.....	.....	.....	1,409	1,773	3,559	2,130	700	.....
Vanderbilt (American)	.....	.....	.....	.....	1,244	1,420	1,349	.....	.....
City of San Diego (American)	.....	.....	.....	.....	1,953	1,600	1,187	.....	.....
Lookout (American)	.....	.....	.....	.....	1,100	.....	.....	.....	.....
Favorite (British)	.....	.....	.....	.....	1,385	3,492	1,887	.....	1,700
Annie (American)	.....	.....	.....	.....	.....	182	50?	1,040	.....
Therese (American, now British)	.....	.....	.....	.....	.....	2,000	900	.....	650
Sylvia Handy (American)	.....	.....	.....	.....	.....	1,700	440?	.....	614
Helen Blum (American)	.....	.....	.....	.....	.....	(?)	536	.....	.....
Dolphin (British, now American, J. G. Swan)	.....	.....	.....	.....	.....	2,200	S'zed.	.....	.....
Alfred Adams (British, now the Lily)	.....	.....	.....	.....	.....	1,455	.....	.....	.....
Black Diamond (British)	.....	.....	.....	.....	.....	328	990	765	55
Pathfinder (British)	.....	.....	.....	.....	.....	1,700	2,377	800	50
Sierra (British)	.....	.....	.....	.....	.....	1,000	.....	.....	.....
Active (British)	.....	.....	.....	.....	.....	1,338	.....	.....	.....
Annie Beck (British)	.....	.....	.....	.....	.....	1,142	S'zed.	.....	.....
W. P. Sayward (British)	.....	.....	.....	.....	.....	1,600	S'zed.	.....	1,600
Grace (British, now the J. H. Lewis)	.....	.....	.....	.....	.....	1,700	S'zed.	.....	.....
Penelope (British)	.....	.....	.....	.....	.....	194	1,292	1,054	1,850
Mountain Chief (British)	.....	.....	.....	.....	.....	630	624	780	.....
Mary Taylor (British)	.....	.....	.....	.....	.....	.....	1,000	.....	.....
Kate (British)	.....	.....	.....	.....	.....	.....	1,625	.....	911
Triumph (British)	.....	.....	.....	.....	.....	.....	500	2,470	60
Lottie Fairfield (British)	.....	.....	.....	.....	.....	.....	2,507	.....	.....
Ada (British)	.....	.....	.....	.....	.....	.....	S'zed.	.....	.....

Seal skins landed at Victoria from Bering Sea, etc.—Continued.

Schooner.	1881.	1882.	1883.	1884.	1885.	1886.	1887.?	1888.	1889.
Juniata (British)	.....	.....	.....	.....	.....	.....	.....	1,030	.....
Annie C. Moore (British)	.....	.....	.....	.....	.....	.....	.....	715	1,300
Viva (British)	.....	.....	.....	.....	.....	.....	.....	2,069	2,180
Maggie Mc (British)	.....	.....	.....	.....	.....	.....	.....	1,424	1,290
Adele (German)	.....	.....	.....	.....	.....	.....	1,350?	450	1,600
Webster (American)	.....	.....	.....	.....	.....	.....	.....	520	.....
Olsen (American)	.....	.....	.....	.....	.....	.....	.....	500	.....
Walter A. Rich (American)	.....	.....	.....	.....	.....	.....	.....	400	.....
Allie J. Alger (American)	.....	.....	.....	.....	.....	.....	400?	380	284
Newton (American) (Venture)	.....	.....	.....	.....	.....	.....	.....	.....	239
J. G. Swan (American)	.....	.....	.....	.....	.....	.....	.....	.....	60
Henry Dennis (American)	.....	.....	.....	.....	.....	.....	.....	.....	700
Sapphire (British)	.....	.....	.....	.....	.....	.....	.....	.....	1,629
Lilly (British)	.....	.....	.....	.....	.....	.....	.....	.....	74
Ariel (British)	.....	.....	.....	.....	.....	.....	.....	.....	1,316
Minnie (British)	.....	.....	.....	.....	.....	.....	.....	.....	521
Beatrice (British)	.....	.....	.....	.....	.....	.....	.....	.....	700
San Jose (American)	.....	.....	.....	.....	.....	.....	.....	.....	700
Lilly L (American)	.....	.....	.....	.....	.....	.....	.....	.....	800
Mollie Adams (American)	.....	.....	.....	.....	.....	.....	.....	.....	1,537
Bessie Reuter (American)	.....	.....	.....	.....	.....	.....	.....	.....	550
Challenge (American)	.....	.....	.....	.....	.....	.....	.....	.....	96
Total	193	327	908	4,089	9,181	27,240	22,331	15,097	23,066
Skins seized by the United States, approximate	.....	.....	.....	.....	.....	2,000	12,000a	.....	2,500
Grand total	193	327	908	4,089	9,181	29,240	34,331	15,097	25,566

a Actual number of skins seized 11,618 or 11,902. See page 337 United States counter case.—J. S. B.

NOTE.—The interrogation point (?) following figures in 1887 column indicates doubt as to the correctness of the report.

Number of Victoria and Northwest Coast fur-seal skins sent to market from 1881 to 1889, inclusive.

Year.	Bering Sea skins.	North Pacific skins.	Total.
1881	193	16,380	16,573
1882	327	22,880	23,207
1883	908	8,186	9,094
1884	4,089	16,053	20,142
1885	9,181	11,184	20,365
1886	29,240	4,735	33,975
1887	34,331	8,908	43,239
1888	15,097	24,801	39,898
1889	25,566	20,580	46,146

The above totals are believed to be very nearly correct, having been compiled from the London catalogues of sales, but the numbers caught, respectively, in Bering Sea and the North Pacific are not definitely known. The catch of the North Pacific has been ascertained by deducting the number reported from the Victoria custom-house records as having been taken in Bering Sea from the total number sold in London.

It will be noticed that nearly in proportion as the Bering Sea catch increased, that of the Northern Pacific decreased; and, that while the total catch of 1888, following the seizures and repression of 1887, was not very materially less, the proportion taken from Bering Sea was much smaller than in the preceding and following year.

The inference may be clearly drawn that to the extent to which illicit sealing is suppressed in Bering Sea, it will be more active in the North Pacific, and that the simple closure of the former body of water against marauders will do little toward the effective protection of seal life.

Value of Victoria, British Columbia, sealing vessels, estimated by A. R. Milne, esq., surveyor of the port of Victoria, and T. T. Williams, of San Francisco, August, 1889.

Schooner.	Owner's name.	Milne's valuation.	Williams's valuation.	Tonnage.	Crew.	
					White.	Indian.
Mary Taylor	Carne, Munsie & Co	$8,000	$4,500	43	5	22
Pathfinder	do	10,000	10,000	66	22	
Viva	do	12,000	12,000	92	22	
Mary Ellen	D. McLean	8,000	6,000	63	22	
Triumph No. 1	R. C. Baker & Co	14,000	14,000	98	30	
Favorite	C. Spring	8,000	6,000	80	7	30
Kate	do	7,000	7,000	58	5	30
Aurora	Not known	8,000	8,000	41	4	24
Minnie	H. Jacobson	8,500	8,500	46	4	30
Sapphire	Marvin & Co	15,000	15,000	124	6	40
Winifred	McDolan	2,500	2,500	13	5	10
Blk Diamond	A. Frank	9,500	5,000	82	5	36
Lily	do	8,500	5,000	69	5	36
Penelope	Gray & Moses	10,000	10,000	70	20	
Maggie Mae	Dodd & Co	10,000	7,000	71	21	
W. P. Sayward	Lundberg & Co	8,000	8,000	60	5	28
Juniata	Hall & Geopel	6,000	3,000	40	5	28
Annie C. Moore	Moore & Hackett	15,000	15,000	113	22	
Theresa	Babbington & Co	10,000	10,000	63	20	
Ariel	Buckman	9,000	9,000	90	21	
Mountain Chief	Indians	3,000	1,000	23		20
Wanderer	Paxton & Co	3,000	1,000	16	3	20
Triumph No. 2	Muir Bros	3,000	1,750	15	3	15
Letetia	Indians	2,000	100	28		20
Total		a 200,500	b 173,350	1,464	261	389

a Actual result, $198,000. b Actual result, $171,350.

Slight errors appear to have been made in footing the above, but the totals are as reported respectively by Milne and Williams.

The above estimates include cost of outfit for a season's cruise, comprising boats, guns, spears, ammunition, provisions, etc.

The schooner *Araunah*, formerly belonging to the Victoria sealing fleet, was seized by the Russian Government July 1, 1888.

Mr. Milne estimates the cost of a sealing venture as follows:

Wages of crews and hunters per vessel	$7,000
Insurance, 7 per cent of $8,000	560
Provisions, salt, ammunition, etc	3,000
Total per vessel, average	10,560

He also estimates the annual average catch at 2,000 skins per vessel, but as a matter of fact the average has been for Victoria vessels during the last four years only about 1,288 skins per vessel annually.

Mr. Williams estimates the expense of a sealing trip as follows:

For five boats	$500
Five Marlin rifles, at $35	175
Five shotguns, at $35	175
Two extra guns	70
Salt for skins	200
Five thousand rounds of ammunition	125
Insurance, one-third of a year	175
Captain's wages four months	400
Ten men at $35, and 5 at $20 per month	1,800
Paid hunters, 1,600 skins at $2 per skin	3,200
Provisions, 20 men 4 months at $8 per month	640
Total per vessel, average	7,460

The annual average price paid for seal skins in Victoria from 1881 to 1889, inclusive, is as follows:

	Per skin.		Per skin.		Per skin.
1881	$9.25	1884	$7.75	1887	$5.50
1882	8.00	1885	7.50	1888	5.62
1883	10.00	1886	7.65	1889	6.50

General average, $7.53 per skin.

It will be observed that the price of Victoria and Northwest coast skins has decreased. This has resulted from the fact that it was found by the London dressers that the skins of seals taken indiscriminately, chiefly from females, in the water, did not compare favorably with those taken from carefully selected young males on the islands.

On the basis of the foregoing figures, the value of the fur-seal trade, as conducted by the Canadians, is surprisingly small. Their annual catch at present prices is worth about $125,000, and the highest estimated value of the tonnage engaged is only $200,000—amounts incomparably small in proportion to the loss that would be sustained by the United States and England in case the seal fisheries were broken up, as will inevitably result if the Canadian manner of killing is continued.

The following is extracted from the report of United States Consul Stevens, of Victoria, British Columbia, to the Department of State, in June, 1889:

Since the beginning of the present decade the hunting of the fur seal has been vigorously pursued from this port. There are some 21 vessels, varying from 26 to 126 tons register (an aggregate tonnage of 1,737 tons), employing 458 men, and valued at about $126,000, engaged in hunting the fur seal. These vessels, some of them having small steam power, leave here about the 1st of January and proceed southward, returning in May and landing the skins, taking some of them as far south as San Diego, Cal., and along the coast up. They again leave for the north, going as far as the Bering Sea, returning in September. The total catch for 1888 amounted to 26,720 skins, much smaller than for recent previous years. Of these, 14,987 were reported as "the Bering Sea collection," the distinctive name given to those taken far north, in the neighborhood of the Aleutian Islands, and claimed to be finer furs than any other.

These skins are sold here in bundles, salted to preserve them, and they may be kept many months in that condition without injury. Ordinarily sales are made at so much per skin for the lot; sometimes, however, they are sold in assortments of males, females, and pups, the average price for the latter being $6 per skin. They are shipped from here to London, where they are dressed and dyed, paying a duty when they reach the United States, as they mostly do, of 30 per cent on their then value of about $22.50 per skin.

During these years (1886–87) some eight of these vessels were seized in the northern waters by the United States revenue cutters for violation of the law of July, 1870, "to prevent extermination of fur-bearing animals." No seizures were made in 1888.

Victoria and Northwest coast fur-seal skins sold and dressed in London.

[Compiled by Mr. Alfred Fraser, of the house of Messrs. C. M. Lampson & Co.]

Year.	Dry skins sold.	Salted skins sold.	Dressed for owners.	Total.
1868	2,141	.....	.....	2,141
1869	1,671	.....	.....	1,671
1870	684	.....	.....	684
1871	12,495	.....	.....	12,495
1872	14,584	1,029	699	16,312
1873	891	.....	40	931
1874	2,772	4,949	122	7,843
1875	1,351	1,646	578	3,575
1876	993	2,042	1,062	4,097
1877	1,173	.....	772	1,945
1878	912	264	2,434	3,610
1879	918	12,212	2,397	15,527
1880	.....	8,939	4,562	13,501
1881	686	9,997	5,890	16,573
1882	321	11,727	11,159	23,207
1883	390	2,319	6,385	9,094
1884	785	9,242	10,115	*a* 20,142
1885	1,520	2,078	16,667	*b* 20,365
1886	979	17,909	15,087	*c* 33,975
1887	2,843	36,907	3,589	*d* 43,239
1888	1,252	36,816	1,930	*e* 39,998
1889	.....	.....	.....	46,146
Total	49,361	158,076	83,488	337,071

a Retained in United States (estimate).
b + 3,000 = 23,365. *c* + 3,000 = 36,975. *d* + 3,000 = 46,239. *e* + 3,000 = 42,000.

NOTE.—Indians dried the skins.

During the past four years, say from 1885 to 1888, about 3,000 Bering Sea and Victoria skins have been annually dressed and dyed in the United States, and must be added to the above.

The large number of dry skins sold in 1871–72 doubtless consisted in part of the stock of the Russian-American Company taken before the cession of the Territory, and held in their warehouse at Sitka.

Adding to the above grand total	337,071
Skins dressed in the United States, as above stated	12,000
	349,071
And deducting those from the Russian-American Company's stock of 1867	24,000
Makes total killing in the waters of the North Pacific and Bering Sea, from 1868 to 1889	325,071

That this number should be considerably more than doubled to represent the total illegitimate destruction of seal life has been so frequently repeated and so thoroughly proved as to need no further proof or demonstration.

It is worthy of note that of the above 325,071 skins, 203,865 have been taken within the last six years in constantly increasing numbers, except during the year 1888 following the seizures and repression of 1887.

Sealing vessels (schooners) fitted out in 1889 under the American flag.

Sylvia Handy.	San Jose.	Lottie.	Caroline.
Allie J. Alger.	Lily L.	Mary Deleo.	Adele (German).
J. G. Swan.	Mollie Adams.	O. S. Fowler.	Marie de las Cruzes(?)
Venture.	Bessie Reuter.	City of San Diego.	Alexander.
Henry Dennis.	Challenge.	Adonia.	Webster.

Decrease in size of Pribilof Island seal skins, 1885–1889.

[Compiled by Mr. Alfred Fraser, of Messrs. C. M. Lampson & Co., of London.]

	Average weight.		1885.	1886.	1887.	1888.	1889.
	Lbs.	*oz.*					
Large middlings	19	0	149	133	29	2	.....
Middlings	15	0	1,811	1,173	696	177	220
Middlings and smalls	12	2	5,300	4,875	2,254	2,318	2,133
Smalls	9	13	20,664	13,318	8,950	9,298	7,020
Large pups	8	4	34,270	28,578	23,178	18,305	11,040
Middling pups	7	0	25,207	30,910	35,591	36,669	26,476
Small pups	6	0	10,684	17,045	24,814	29,239	33,859
Extra small pups	5	4	1,291	3,857	4,426	3,962	18,728
Extra extra small pups	4	0	.....	.....	.....	.....	521
Total			99,376	99,889	99,938	99,970	99,997

The lessees of the seal islands have been unable during the last three years to secure the most desirable sizes of skins, owing to diminished number of seals, the result of illicit killing by marauders.

The decrease in the size of skins taken by lessees is in proportion to the increase of numbers caught by the marauders.

LOSS OF FEMALE SEALS.

British and American testimony.

[Extract from letter of Sir George Baden-Powell, published in the London Times November 30, 1889.]

As a matter of fact the Canadian sealers take very few, if any, seals close to the islands. Their main catch is made far out at sea, and is almost entirely composed of females. (Case of the United States, p. 200, and Senate Ex. Doc. No. 55, Fifty-second Congress, first session, p. 96.)

[Extract from letter of Rear-Admiral Hotham, of the British navy, to Admiralty.]

WARSPITE, *at Esquimalt, September 10, 1890.*

I have to request you will bring to the notice of the Lords Commissioners of Admiralty this letter with reference to my telegram of the 8th instant.

I personally saw the masters of the sealing schooners named below, and obtained from them the information here reported: Capt. C. Cox, schooner *Sapphire;* Captain Petit, schooner *Mary Taylor;* Captain Hackett, schooner *Annie Seymour;* Capt. W. Cox, schooner *Triumph.*

* * * * * * *

They also mentioned that two-thirds of their catch consisted of female seals, but that after the 1st of July very few indeed were captured "in pup," and that when sealing outside the Bering Sea, round the coast, on the way up (where this year the heaviest catches were made), they acknowledged that the seals "in pup" were frequently captured. (Extract from Vol. III, Appendix to Case of Great Britain, cited in United States, No. 1, 1891, p. 17.)

There were killed this year so far from 40,000 to 50,000 fur seals, which have been taken by schooners from San Francisco and Victoria. The greater number were killed in Bering Sea, and were nearly all cows or female seals. This enormous catch, with the increase which will

take place when the vessels fitting up every year are ready, will, I am afraid, soon deplete our fur-seal fishery, and it is a great pity such a valuable industry could not in some way be protected. (Extract from reports of the department of fisheries of Canada, 1886, by Thomas Mowat, inspector of fisheries for British Columbia, p. 268. Cited in British Case, Appendix, Vol. III, p. 173; United States No. 1890.)

The majority of our hunters contend that there are over 7 per cent of pups in the entire catch of fur seals on the coast, while in Bering Sea the catch does not exceed 1 per cent. But they can not deny the fact that 60 per cent of the entire catch of Bering Sea is made up of female seals. (Extract from reports of the department of fisheries, Canada, 1888, p. 241, by Thomas Mowat, inspector of fisheries for British Columbia. Cited in United States Case, p. 201.)

Niel Bonde, of Victoria, sealer. (Case of United States, Appendix, Vol. II, p. 315.)

Bonde has been out four years on sealing schooners from Victoria, namely, from 1887 to 1890, inclusive. He says:

The seals caught along the coast after the 1st of April were mostly pregnant females, and those caught in Bering Sea were females that had given birth to their young. I often noticed the milk flowing out of their breasts when being skinned and have seen live pups cut out of their mothers and live around on the decks for a week.

Cross-examination by the British Government (see British Counter Case, Vol. II, p. 94):

That on each of said vessels [namely, the four he had served on] I have had more or less to do with skinning the seals, and would say that about 60 per cent on the coast were females and about 50 per cent in Bering Sea. I distinguished the male skin from the female by the absence of teats.

Christ Clausen, of Victoria, master mariner (Case of United States, Appendix, Vol. II, p. 319):

Acted as mate in 1889. Was navigator on schooner *Minnie* in 1890.

My catch that year was 2,600, of which about 2,000 were caught in Bering Sea.

Acted as navigator on same vessel in 1891.

The seals we catch along the coast are nearly all pregnant females. It is seldom we capture an old bull, and what males we get are usually young ones. I have frequently seen cow seals cut open and the unborn pups cut out of them, and they would live for several days. This is a frequent occurrence. It is my experience that fully 85 per cent of the seals I took in Bering Sea were females that had given birth to their pups, and their teats would be full of milk. I have caught seals of this kind from 100 to 150 miles away from the Pribilof Islands.

E. M. Greenleaf, of Victoria, master mariner (Case of the United States, Appendix, Vol. II, p. 324):

Since then (1882) I have been interested in the sealing business, and am well acquainted with it and the men engaged in it and the methods employed. I am acquainted with the hunters and masters who sail from this port, and board all incoming and outgoing vessels of that class. These men all acknowledge that nearly all the seals taken off the Pacific Coast are females, and that they are nearly all with young.

* * * * * * *

I have also learned by conversation with Bering Sea hunters that they kill seal cows 20 to 200 miles from the breeding grounds and that these cows had recently given birth to young. I have observed in the skins that the size of the teats show either an advanced state of pregnancy or of recent delivery of young.

Arthur Griffin, of Victoria, sealer (Case of United States, Appendix, Vol. II, p. 325):

He went sealing in 1890.

Began sealing off the northern coast of California, following the sealing herd northward, capturing about 700 seals in the North Pacific Ocean, two-thirds of which were females with pups; the balance were young seals, both male and female. We entered Bering Sea July 13 through Unimak Pass and captured between 900 and 1,000 seals therein, most of which were females in milk.

Of the following year, he says:

We captured between 900 and 1,000 on the coast, most all of which were females with pups. We entered the sea July 12 through Unimak Pass and captured about 800 seals in those waters, about 90 per cent of which were females in milk from 20 to 100 miles from the rookeries.

James Harrison, of Victoria, sealer (Case of the United States, Appendix, Vol. II, p. 326):

We commenced sealing right off the coast; went as far south as the California Coast, and then hunted north to the west coast of Vancouver Islands. Caught 500 skins during the season; almost all of them were pregnant females. Out of 100 seals taken about 90 per cent would be females with young pups in them. I can't tell a male from a female while in the water at a distance. On an average, I think the hunters will save about one out of three that they kill, but they wound many more that escape and die afterwards. We entered Bering Sea about the 1st of June, and caught about 200 seals in those waters. They were mostly mothers that had given birth to their young and were around the fishing banks feeding. The hunters used shotguns and rifles. In Bering Sea we killed both males and females, but I do not know the proportion of one to the other.

James Hayward, of Victoria, sealer (Case of the United States, Appendix, Vol. II, p. 327):

He went out sealing in 1887, 1888, 1890, and 1891. His vessels appear to have made large catches. He makes the following statement:

Most of the seals killed on the coast are pregnant females, while those we killed in Bering Sea after the 1st of July were females that had given birth to their young on the seal islands and come out into the sea to feed. Have caught them 150 miles off from the shore of the seal islands, and have skinned them when their breasts were full of milk. Seals travel and go a long way to feed.

Alfred Dardean, of Victoria, sealer (Case of United States, Appendix, Vol. II, p. 322):

He went sealing in 1890.

We caught over 900 skins before entering the sea and our whole catch that year was 2,159 skins. Of the seals that were caught off the coast fully 90 per cent out of every hundred had young pups in them. The boats would bring the seals killed on board the vessel and we would take the young pups out and skin them. If the pup is a good, nice one we would skin it and keep it for ourselves. I had 8 such skins myself. Four out of five, if caught in May or June, would be alive when we cut them out of the mothers. One of them we kept for pretty near three weeks alive on deck by feeding it on condensed milk. One of the men finally killed it because it cried so pitifully. We only got 3 seals with pups in them in Bering Sea. Most all of them were females and had given birth to their young on the islands, and the milk would run out of the teats on the deck when we would skin them. We caught female seals in milk more than 100 miles off the Pribilof Islands.

Morris Moss, furrier, and vice-president Sealers' Association of Victoria (Case of United States, Appendix, Vol. II, p. 341):

He has bought from 10,000 to 20,000 seal skins per annum.

I believe the majority of seals captured by white hunters in Bering Sea are females in search of food.

J. Johnson, of Victoria, sealer and sailing master (Case of the United States, Appendix, Vol. II, p. 331):

Has spent six years of his life sealing, and been captain of four different schooners.

A large majority of the seals taken on the coast are cows with pup. A few young males are taken, the ages ranging from 1 to 5 years. Once in a while an old bull is taken in the North Pacific Ocean. I use no discrimination in killing seals, but kill everything that comes near the boat in the shape of a seal. The majority of the seals killed in Bering Sea are females. I have killed female seals 75 miles from the islands that were full of milk.

Victor Jacobson, of Victoria, sealer (Case of the United States, Appendix, Vol. II, p. 328):

He is a British subject. Has been engaged in sealing for eleven years, ten years as a master. He is now master and owner of schooner *Mary Ellen* and owner of schooner *Minnie*.

The female seals go through the passes from the Pacific Ocean into Bering Sea between June 25 and July 15. Females killed previous to this time I found with pup, but none with pups after that latter date. I have killed female seals taken by me that three in five are females and nearly all with pup.

Cross-examination by the British Government (See British Counter Case, Appendix, Vol. II, p. 83):

My experience has been that about three out of five seals taken on the coast are females, and about the same in Bering Sea.

Edwin P. Porter, of Victoria, sealer (Case of the United States, Appendix, Vol. II, p. 346):

My experience in four years' sealing is that nearly all the seals taken along the coast are pregnant females, and it is seldom that one of them is caught that has not a young pup in her. In the fore part of the season the pup is small, but in May and June, when they are taken off the Queen Charlotte and Kodiak islands, the unborn pup is quite large, and we frequently take them out of the mothers alive. I have kept some of them alive for six weeks, that were cut out of their mothers, by feeding them condensed milk. The seals we capture in Bering Sea were fully 80 per cent females that had given birth to their young. A fact that I often noticed was that their teats would be full of milk when I skinned them, and I have seen them killed from 20 to 100 miles from the seal islands.

Charles Peterson, of Victoria, sealer (Case of the United States, Appendix, Vol. II, p. 345):

We entered Bering Sea about the 15th of August, through the Unimak Pass, and captured therein 1,404 seals, most of which were cows in milk. On that voyage we caught female seals in milk over 80 miles from the rookeries where they had left their young. I have seen the deck almost flooded with milk while we were skinning the seals. Ninety per cent of all the seals we captured in the water were female seals.

Robert H. McManus, of Victoria, journalist (Case of the United States, Appendix, Vol. II, p. 337):

Tuesday, August 25, rain in morning. Boats and canoe out at half past 9 o'clock; out all day (returning to dinner). Result: First boat, 2 seals reported; wounded and lost 5; seals said to be shy and wary, and not so numerous as formerly; attention called to cow seal being skinned (which I had taken for a young bull). The snow-white milk running down blood-stained deck was a sickening sight. Indian canoe, 1 seal. Total, 3 seals, 2 mediums, and 1 cow.

Wednesday, August 26, cloudy morning. Seals floating round schooner. Boats and canoe out all day. Result: First boat, 1 seal; second boat, none; Indian canoe, 10 seals; total, 11 seals; 8 cows in milk and 3 medium. Skipper in first boat blamed the powder. Second boat said it was too heavy and clumsy for the work. Skipper reported having wounded and lost 7, and the men in second boat 9—16 in all. Skipper said seals not so numerous as formerly, more shy; also blamed the powder. Evidently a great deal of shooting and very few seals to correspond.

Saturday, August 29, ship's cook brought down from deck a large cow seal at 40 yards rise. Boats and canoe out all day. Fine, clear, balmy weather. Akutan Island in sight. Result: First boat, 3 seals; second boat, 3 seals; cook, from deck, 1; Indian canoe, 10; total catch, 17 seals, greater proportion cows in milk. Horrid sight; could not stay the ordeal out till all were flayed. A large number reported as wounded and lost. According to appearances, slaughter and indiscriminate.

Sunday, August 30. Result of hunt: First boat, 2 seals; second boat, 1; Indian canoe, 7; total, 10 seals, 7 of which were cows in milk. Several, as usual, reported wounded and lost by the boats. The great superiority of the Indian spear evident.

The British commissioners, in their report, express the following *views with regard to* pelagic sealing, which views should be specially

noted in connection with the foregoing descriptions of how gravid nursing females are killed:

633. By the pelagic sealers and by Indian hunters along the coast, fur seals of both sexes are killed, and, indeed, it would be unreasonable, under the circumstances, to expect that a distinction should be made in this respect, any more than that the angler should discriminate between the sexes of the fish he may hook.

610. The accusation of butchery laid against those who take the seals on shore can not be brought against this pelagic method of killing the seal, which is really hunting as distinguished from slaughter, and in which the animal has what may be described as a fair chance for its life.

Capt. C. L. Hooper, of the United States revenue marine (United States Counter Case, p. 214):

Captain Hooper made extensive official investigations in regard to seal life on the Pribilof Islands, in Bering Sea, and the North Pacific Ocean in 1891 and 1892. In the course of these investigations he captured, between July 24 and August 31, 1892, 41 seals in Bering Sea. He made no efforts to secure large numbers or all that he saw. The 41 seals were composed of the following classes: Old males, 1; young males, 11; nursing cows, 22; virgin cows, 7. He says:

Since leaving San Francisco on March 9 the *Corwin* has steamed 16,200 miles, and 8,713 miles since the date of my reporting for duty, as part of the Bering Sea fleet. Of this distance, 5,567 miles were steamed in Bering Sea.

* * * * * * *

I find in general, as one of the results of my investigations, that more than two-thirds of the seals taken are now having young or capable of bearing them at no distant day; that it is impossible to discriminate as to age or sex of seals while in the water, except in the case of young pups and old bulls; that even under the most favorable conditions a large percentage is lost by sinking or wounding; and that by reason of the tameness of the nursing cows, which form the larger part of the seals sent, pelagic hunting in Bering Sea is peculiarly destructive and unless stopped will wholly exterminate the already greatly depleted herds.

I do not believe that it is possible to indicate any zonal limit in Bering Sea beyond which pelagic sealing could be carried on and at the same time preserve the seals from complete annihilation. Further, I wish to renew a statement contained in a former report made to the Secretary of the Treasury, that, unless supplemented with protection in the Pacific Ocean, no amount of protection in Bering Sea will preserve the herds.

Capt. L. G. Shepard, United States revenue marine (Case of the United States, Appendix, Vol. II, p. 187):

I am 45 years of age, a resident of Washington, D. C., and am captain in the United States Revenue-Marine Service, chief of division revenue marine, Treasury Department. In command of the revenue steamer *Rush*, I made three cruises to Bering Sea in the years 1887, 1888, and 1889 for the purpose of enforcing existing law for protection of seal life in Alaska and the waters thereof. I hereby append to and make a part of this affidavit a table, marked A, giving the names of the vessels seized by me in Bering Sea while violating the law of the United States in relation to the taking of fur-bearing animals.

* * * * * * *

I examined the skins taken from sealing vessels seized in 1887 and 1889, over 12,000 skins, and of these at least two-thirds or three-fourths were the skins of females. Of the females taken in the Pacific Ocean, and early in the season in Bering Sea, nearly all are heavy with young, and the death of the female necessarily causes the death of the unborn pup seal; in fact, I have seen on nearly every vessel seized the pelts of unborn pups which had been taken from their mothers. Of the females taken in Bering Sea nearly all are in milk, and I have seen the milk come from the carcasses of dead females lying on the decks of sealing vessels which were more than 100 miles from the Pribilof Islands. From this fact, and from the further fact that I have seen seals in the water over 150 miles from the islands during the summer, I am convinced that the female, after giving birth to her young on the rookeries, goes at least 150 miles, in many cases, from the islands in search of food. It is impossible to distinguish a male from a female seal in the water, except in the case of a very old bull, when his size distinguishes him Therefore, open-sea sealing is entirely indiscriminate as to sex or age.

Capt. Daniel McLane (Case of the United States, Appendix, Vol. II, p. 443):

Captain McLane has been engaged in pelagic sealing for eleven years as master of vessels and deposes in part as follows:

Q. Of what sex are the seals taken by you, or usually killed by hunting vessels in the North Pacific and Bering Sea?—A. Females.

Q. What percentage of them are cows? Suppose you catch 100 seals, how many males would you have among them?—A. About 10.

Q. What percentage of the cows taken are with pup?—A. The females are mostly all with pup; that is, up until the 1st of July.

Q. Have you noticed any decrease in the quantity of animals in the last few years?—A. Yes, sir.

Q. To what do you attribute the cause?—A. Killing off the females.

Q. If sealing continues as heretofore, is there any danger of exterminating them?—A. Yes, sir; they will all be exterminated in three years, and there will be no more sealing.

Q. Do you think it is absolutely necessary to protect the cows in the Bering Sea?—A. Yes, sir.

James Kiernan, of San Francisco, sealing captain (Case of the United States, Appendix, Vol. II, p. 449):

My experience has been that the sex of the seals usually killed by hunters employed on vessels under my command, both in the ocean and Bering Sea, were cows. I should say that not less than 80 per cent of those caught each year were of that sex. I have observed that those killed in the North Pacific were mostly female carrying their young, and were generally caught while asleep on the water, while those taken in the Bering Sea were nearly all mother seals in milk, that had left their young and were in search of food.

* * * * * * *

The mother does not leave the rookery in search of food until she has dropped her young and become pregnant again, hence when she has been slain it means the loss of three, as the young pup will unquestionably die for lack of sustenance.

Michael White, of San Francisco, sealing captain (Case of the United States, Appendix, Vol. II, p. 489):

I am 50 years of age. I reside at East Oakland. My occupation is master mariner, and I have been so engaged for twenty-seven years, off and on. I have been engaged in seal hunting during the years 1885, 1887, 1888, and 1889 in the North Pacific and Bering Sea. I first went out in 1885 in the schooner *City of San Diego*, chartered by myself and others, and my catch for that year was between 2,300 and 2,400 seals. Of that number about 1,900 were caught in Bering Sea. There were but very few vessels sealing at that time. In 1886 I was master of the schooner *Terese*, sailing from San Francisco on the 2d day of February, and commenced capturing seals on the coast of California, and followed them from that date north into Bering Sea. We caught them from 5 to 60 miles off the coast. I entered Bering Sea on the 6th day of June, 1886, and previous to that time had caught about 880 seals. Then I sealed in Bering Sea from that time to the 28th of August; caught about 2,200 more, the whole catch being 3,000 for the year.

In 1887 I was master of the schooner *Lottie Fairchild*, sailing from San Francisco on or about the 17th day of March, and worked northward to Bering Sea, and captured 883 seals. I then entered Bering Sea about the 6th of July, cruising there until the 29th day of August, and took 2,517 seals more, the whole catch being 3,400 for the year.

In 1888 I took the schooner *Undaunted* on a fishing and sealing voyage, leaving here on or about the 20th of March, and cruised in the North Pacific up to the island of Kodiak, capturing 400 seals up to the 7th day of June. I did not enter Bering Sea that year. I did the same in 1889, my trip being the same as in 1888, and my capture of seals was about the same. I then quit sealing, and I am now engaged in trading with the Gilbert and Marshall islands in the South Pacific Sea.

In my captures off the coast between here and Sitka 90 per cent of my catch were females, but off the coast of Unimak Pass there was a somewhat smaller percentage of females, and nearly all the females were cows heavy with pup, and, in some instances, the period of gestation was so near at hand that I have frequently taken the live pup from the mother's womb.

I never paid any particular attention as to the exact number of or proportion of each sex killed in Bering Sea, but I do know that the larger portion of them were *females* and were mothers giving milk. I have never hunted within 15 miles of the

Pribilof Islands, but I have often killed seals in milk at distances of not less than 100 to 200 miles from these islands. From my knowledge and experience in the business it is my conviction that within the last few years, since the sealers have become so numerous in the Pacific and Bering Sea, that not more than one out of three is secured. Our purpose and practice was to take all seals we could get, regardless of their age or sex, without any discrimination whatever.

M. A. Healy:

My own observation and the information obtained from seal hunters convince me that fully 90 per cent of the seals found swimming in Bering Sea during the breeding season are females in search of food, and the slaughter results in the destruction of her young by starvation. I firmly believe that the fur-seal industry at the Pribilof Islands can be saved from destruction only by a total prohibition against killing seals, not only in the waters of Bering Sea, but also during their annual immigration northward in the Pacific Ocean.

This conclusion is based upon the well-known fact that the mother seals are slaughtered by the thousands in the North Pacific while on their way to the islands to give birth to their young, and extinction must necessarily come to any species of animal where the female is continually hunted and killed during the period required for gestation and rearing of her young. As now practiced, there is no respite to the female seal from the relentless pursuit of the seal hunters, for the schooners close their season with the departure of the seals from the northern sea and then return home, refit immediately, and start out upon a new voyage in February or March, commencing upon the coast of California, Oregon, and Washington, following the seals northward as the season advances into Bering Sea.

Captain Caulson says:

In company with Special Agent Murray, Captain Hooper, and Engineer Brerton, of the *Corwin*, I visited the Reef and Garbotch rookeries, St. Paul Island, in August, 1891, and saw one of the most pitiable sights that I have ever witnessed. Thousands of dead and dying pups were scattered over the rookeries, while the shores were lined with emaciated, hungry little fellows, with their eyes turned toward the sea, uttering plaintive cries for their mothers, which were destined never to return. Numbers of them were opened, their stomachs examined, and the fact revealed that starvation was the cause of death, no organic disease being apparent.

The great number of seals taken by hunters in 1891 was to the westward and northwestward of St. Paul Island, and the largest number of dead were found that year in rookeries situated on the west side of the island. This fact alone goes a great way, in my opinion, to confirm the theory that the loss of the mothers was the cause of mortality among the young.

After the mother seals have given birth to their young on the islands they go to the water to feed and bathe, and I have observed them, not only around the island, but from 80 to 100 miles out at sea.

In different years the feeding grounds or the location where the greater number of seals are taken by poachers seem to differ; in other words, the seals frequently change feeding grounds. For instant, in 1887 the greatest number of seals were taken by poachers between Unimak and Akutan passes and the seal islands, and to the southwestward of St. George Island. In 1889 the catching was largely done to the southward and eastward, in many cases from 50 to 150 miles distant from the seal islands. In the season of 1890, to the southward and westward, also to northwest and northeast of the islands, showing that the seals have been scattered. The season of 1891, the greatest number were taken to northward and westward of St. Paul, and at various distances from 25 to 150 miles away.

Mr. Redpath:

The Alaskan fur seal is a native of the Pribilof Islands, and, unless prevented, will return to those islands every year with the regularity of the seasons. All the peculiarities of nature that surround the Pribilof group of islands, such as low and even temperature, fog, mist, and perpetually clouded sky, seem to indicate their fitness and adaptability as a home for the Alaskan fur seal; and, with an instinct bordering on reason, they have selected these lonely and barren islands as the choicest spots of earth upon which to assemble and dwell together during their six months' stay on land; and annually they journey across thousands of miles of ocean and pass hundreds of islands, without pause or rest, until they come to the place of their birth. And it is a well-established fact that upon no other land in the world do the Alaskan fur seal haul out of water.

J. C. Redpath says:

No cow will nurse any pup but her own, and I have often watched the pups attempt to suck cows, but they were always driven off, and this fact convinces me

that the cow recognizes her own pup but that the pup does not know its dam. At birth, and for several weeks after, the pup is utterly helpless and entirely dependent upon its dam for sustenance, and should anything prevent her return during this period, it dies on the rookery. This has been demonstrated beyond a doubt since the sealing vessels have operated largely in Bering Sea during the months of July, August, and September, and which, killing the cows at the feeding grounds, left the pups to die on the islands.

At about 5 weeks old the pups begin to run about and congregate in bunches or "pods," and at 6 to 8 weeks old they go into the shallow water and gradually learn to swim. They are not amphibious when born, nor can they swim for several weeks thereafter, and were they put into the water would perish beyond a doubt, as has been well established by the drowning of pups caught by the surf in stormy weather. After learning to swim the pups still draw sustenance from the cows, and I have noticed at the annual killing of pups for food in November that their stomachs were always full of milk and nothing else, although the cows had left the islands some days before. I have no knowledge of the pups obtaining sustenance of any kind except that furnished by the cows, nor have I ever seen anything but milk in a dead pup's stomach.

Karp Buterin says:

Schooners kill cows, pups die, and seals are gone. Some men tell me last year, "Karp, seals are sick." I know seals are not sick; I never seen a sick seal, and I eat seal meat every day of my life. No big seals die unless we club them; only pups die for food after the cows are shot at sea. When we used to kill pups for food in November, they were always full of milk; the pups that die on the rookeries have no milk. The cows go into the sea to feed after the pups are born, and the schooner men shoot them all the time.

Captain Carthcut says:

About 80 per cent of the seals I caught in Bering Sea were mothers in milk, and were feeding around the fishing banks just north of the Aleutian Islands, and I got most of my seals from 50 to 250 miles from the seal islands. I don't think I ever sealed within 25 miles of the Pribilof Islands. They are very tame after giving birth to their young, and are easily approached by the hunters. When the females leave the islands to feed, they will go very fast to the fishing banks, and after they get their food they will go to sleep on the waters. That is the hunter's great chance. I think we secure more in proportion to the number killed than we did in the North Pacific. I hunted with shotgun and rifle, but mostly with shotgun. Seals were not nearly as numerous in 1887 as they were in 1877, and it is my belief that the decrease in numbers is due to the hunting and killing of female seals in the water. I do not think it possible for seals to exist for any length of time if the present slaughter continues. The killing of the female means death to her born or unborn pup, and it is not reasonable to expect that this immense drain on the herds can be continued without a very rapid decrease in their numbers, and which practically means extermination within a very few years.

Christ Clausen says:

The Indian hunters, when they use spears, saved nearly every one they struck. It is my observation and experience that an Indian or a white hunter, unless very expert, will kill and destroy many times more than he will save if he uses firearms. It is our object to take them when asleep on the water, and any attempt to capture a breaching seal generally ends in failure. The seals we catch along the coast are nearly all pregnant females. It is seldom we capture an old bull, and what males we get are usually young ones. I have frequently seen cow seals cut open and unborn pups cut out of them, and they would live for several days. This is a frequent occurrence. It is my experience that fully 85 per cent of the seals I took in Bering Sea were females and had given birth to their pups, and their teats would be full of milk. I have caught seals of this kind 100 to 150 miles from Pribilof Islands. It is my opinion that spears should be used in hunting seals, and if they are to be kept from extermination the shotgun should be discarded.

George Dishow says:

I use a shotgun exclusively for taking seals. Old hunters lose but very few seals, but beginners lose a great many. I use the Parker shotgun. A large proportion of all seals taken are females with pup. I never examined them as to sex. But very few old bulls are taken, only five being taken out of a total of 900 seals taken by my schooner. Use no discrimination in killing seal, but shoot everything that comes near the boat in the shape of a seal. Hunters shoot seal in the most exposed part of the body. Have never known any pups to be born in the water, nor on the land on

the coast of Alaska anywhere outside of the Pribilof Islands. Have never known fur seal to haul up on the land anywhere on the coast except on the Pribilof Islands. Most of the seals taken in Bering Sea are females. Have taken them 70 miles from the islands that were full of milk. I think a closed season should be established for breeding seal from January 1 to August 15 in the North Pacific Ocean and Bering Sea.

George Fairchild says:

Most of them were cows, nearly all of which had pups in them. We took some of the pups alive out of the bodies of the females. We entered Bering Sea May 25, and we got 704 seals in there, the greater quantity of which were females with their breasts full of milk, a fact which I know by reason of having seen the milk flow on the deck when they were being skinned. We had five boats on board, each boat having a hunter, boat puller, and steerer. We used shotguns and rifles. We got one out of every five or six that we killed or wounded. We wounded a great many that we did not get. We caught them from 10 to 50 miles off the seal islands.

Norman Hodgson says:

I do not think it possible for fur seals to breed or copulate in water at sea, and never saw nor heard of the action taking place on a batch of floating kelp. I have never seen a young fur-seal pup of the same season's birth in the water at sea nor on a patch of floating kelp, and, in fact, never knew of their being born anywhere save on a rookery. I have, however, cut open a gravid cow and taken the young one from its mother's womb alive and crying. I do not believe it possible for a fur seal to be successfully raised unless born and nursed on a rookery. I have seen fur seals resting on patches of floating kelp at sea, but do not believe they ever haul up for breeding purposes anywhere except on rookeries.

Captain Tanner, lieutenant-commander in the United States Navy, makes a deposition which is entitled to particular consideration. The following is a short extract:

Seals killed in Bering Sea after the birth of pups are largely mother seals, and the farther they are found from the islands the greater the percentage will be. The reason for this seeming paradox is very simple. The young males, having no family responsibilities, can afford to hunt nearer home, where food can be found if sufficient time is devoted to the search. The mother does not leave her young except when necessity compels her to seek food for its sustenance. She can not afford to waste time on feeding grounds already occupied by younger and more active feeders, hence she makes the best of her way to richer fields farther away, gorges herself with food, then seeks rest and a quiet nap on the surface. Under these circumstances she sleeps soundly, and becomes an easy victim to the watchful hunter.

A double waste occurs when the mother seal is killed, as the pups will surely starve to death. A mother seal will give sustenance to no pup but her own. I saw sad evidences of this waste on St. Paul last season, where large numbers of pups were lying about the rookeries, where they had died of starvation.

DECREASE OF SEALS.

EXCESSIVE KILLING THE ADMITTED CAUSE.

We find that since the Alaska purchase a marked diminution in the number of seals on and habitually resorting to the Pribilof Islands has taken place; that it has been cumulative in effect, and that it is the result of excessive killing by man. (Joint report of United States and British Bering Sea commissioners.)

PELAGIC SEALING THE SOLE CAUSE.

Opinions of American commissioners.

Having answered the first of the two queries relating to conditions of seal life at the present time, the second becomes important. It is: Has the decrease in number been confined to any particular class of seals, or is it most notable in any class or classes? In answer to this, it is our opinion that the diminution in numbers began and continues to be most notable in female seals. (Report of American commissioners.)

As a matter of fact, there is sufficient evidence to convince us that by far the greater part of the seals taken at sea are females; indeed, we have yet to meet with any evidence to the contrary. The statements of those who have had occasion to examine the catch of pelagic sealers might be quoted to almost any extent to the effect that at least 80 per cent of the seals thus taken are females. On one occasion we examined a pile of skins picked out at random, and which we have every reason to believe was a part of a pelagic catch, and found them nearly all females. When the sealers themselves are not influenced by the feeling that they are testifying against their own interests, they give similar testimony. The master of the sealing schooner *J. G. Swan* declared that in the catch of 1890, when he secured several hundred seals, the proportion of females to males was about four to one, and on one occasion in a lot of 60 seals, as a matter of curiosity, he counted the number of females with young, finding 47. (Report of American commissioners.)

The decrease in the number of seals is the result of the evil effects of pelagic sealing. (Report of American commissioners.)

Opinion of Dr. Allen.

From the foregoing summary it is evident that the decline in the number of the killable seals at the Pribilof rookeries and the immense decrease in the total number of seals on the Pribilof Islands are not due to any change in the management of the seal herd at the islands, but to the direct and unquestionably deleterious effects of pelagic sealing. At the islands the killing is regulated with reference to the number of killable seals on the rookeries, the designated quota is limited to nonbreeding young males, and every seal killed is utilized. The killing, as thus regulated, does not impair the productiveness of the rookeries. In pelagic sealing the slaughter is indiscriminate and unlimited, and a large proportion of the seals killed are lost. The catch also consists almost wholly of breeding females, which at the time of capture are either heavy with young or have young on the rookeries depending upon them for sustenance. Thus two or more seals are destroyed to every one utilized, and nearly all are drawn from the class on which the very existence of the seal herd depends. (Article by Dr. J. A. Allen.)

Opinions of experts.

I have always taken a great interest in the sealing industry and felt a great desire to have them protected from destruction, and I say without hesitation that the great decrease in the number now annually arriving at the seal islands is due entirely to the killing of female seals by pelagic sealers. (George Adams.)

From my general knowledge of natural history, from my study of the habits of seals, as well as from the opportunities I have had to acquaint myself with the sources of destruction which are at work, I firmly believe that pelagic sealing would not only account for the diminution of the seal herd, but if continued the seals will inevitably be commercially destroyed. (A. B. Alexander.)

I believe there has been a great decrease of seals on the islands since I left there, and this is no doubt due to pelagic sealing. (James *Armstrong.)*

My people wondered why this was so, and no one could tell until we learned that hunters in schooners were shooting and destroying them in the sea. Then we knew what the trouble was, for we knew the seals they killed and destroyed must be cows, for most all the males remain on or near the islands until they go away in the fall or fore part of the winter. We also noticed dead pups on the rookeries that had been starved to death. If they had not killed the seals in the sea there would be as many on the rookeries as there was ten years ago. There was not more than one fourth as many seals in 1891 as there was in 1880. We understand the danger there is in the seals being all killed off and that we will have no way of earning our living. There is not one of us but what believes if they had not killed them off by shooting them in the water there would be as many seals on the islands now as there was in 1880, and we could go on forever taking 100,000 seals on the two islands; but if they get less as fast as they have in the last five or six years there will be none left in a little while. (Kerrick Artomanoff.)

Upon examining the Bering Sea catch for 1891, as based upon the records of the Victoria custom-house, I ascertained that nearly 30,000 seals had been taken by the British fleet alone in Bering Sea during the summer of 1891. When there is added to this the catch of the American vessels, the dead pups upon the rookeries, and allowances made for those that are killed and not recovered, we have a catch which will not only nearly reach in numbers the quota of male seals allowed to be taken upon the islands in years gone by, but we have a catch in the securing of which destruction has fallen most heavily upon the producing females. This is borne out by a further fact. The young bachelor seals can lie idly on the hauling grounds and through the peculiarities of their physical economy sustain life with a small supply of food, but the cows must range the ocean in search of nourishment that they may meet the demands made upon them by their young. That seals go a great distance from the islands I know from personal observation, for we saw them 120 miles to the northward of the island on the way to Nunival. That the females outnumber the males ten to one is well known, otherwise the hauling ground would present such an array of killable seals that there would be no necessity for the Government to suspend the annual quota. It inevitably follows that the females are the class most preyed upon in Bering Sea. No class of animals which bring forth but a single offspring annually can long sustain itself against the destruction of the producers. As a result of my investigation I believe that the destruction of females was carried to the point, in about 1885, where the birth rate could not keep up the necessary supply of mothers, and that the equilibrium being once destroyed and the drain upon the producing class increasing from year to year from that date, the present depleted condition of the rookeries has resulted directly therefrom. (J. Stanley-Brown.)

When we first noticed that the seals on the rookeries were not so many as they used to be, we did not know what was wrong, but by and by we found that plenty of schooners came into the sea and shot seals, and we often found bullets and shot in seals when we were skinning them. And then we found plenty of dead pups on the rookeries, more and more every year, until last year (1891), when there were so many the rookeries were covered with them, and when the doctor (Akerly) opened some of them there was no milk or food in their stomachs. Then we all knew the cows had been shot when they went into the sea to feed, and the pups died because they had nothing to eat. Plenty of schooners

came first about eight or nine years ago, and more and more every year since, and the seals get less and less ever since schooners came; and my people kept saying "No cows," "No cows." First the cows get less and then the bachelors get less, and the company agent he says "kill smaller seals," and we kill some whose skins weigh only 4½ pounds, instead of 7 pounds, same as they always got. Then we could not get enough of seals and at last we could hardly get enough for meat. Schooners kill cows, pups die, and seals are gone. (Karp Buterin.)

The cause of this decrease I believe to be due to the promiscuous killing of the seals by hunters in the open sea and the disturbance caused by their presence in destroying the mother seals and scattering the herds. (James H. Douglass.)

I know of no other cause for the decrease than that of the killing of the cows at sea by the pelagic hunters, which I believe must be prohibited if the Alaskan fur seal is to be saved from total destruction. (C. L. Fowler.)

In my opinion pelagic sealing is the cause of redriving on the islands, the depletion of the rookeries, and promises to soon make the Alaska fur-seal herd a thing of the past. If continued as it is to-day, even if killing on the islands was absolutely forbidden, the herd will in a few years be exterminated. (Charles J. Goff.)

During my visit to the islands of St. Paul and St. George for the last twenty years I have carefully noticed that those islands were visited by great herds of fur seals during the breeding season, and that, although 100,000 male seals were taken annually at the islands by the lessees, no perceptible diminution in their numbers was noticeable until within the past few years, when the killing of seals in the open sea on the part of fishing vessels became prevalent, since which time there has been a very perceptible diminution in the number of seals seen in the water of Bering Sea and hauling grounds on the islands. This decrease has become alarmingly sudden in the last three or four years, due, I believe, to the ruthless and indiscriminate methods of destruction employed by vessels in taking female seals in the open sea. (Capt. M. A. Healey.)

I made the conditions of seal life a careful study for years, and I am firmly of the opinion their decrease in number on the Pribilof Islands is due wholly and entirely to hunting and killing them in the open sea. (W. S. Hereford.)

When in 1886 we all saw the decrease of seals upon the hauling grounds and rookeries, we asked each other what was the cause of it, but when we learned that white men were shooting seals in the water with guns we knew what was the matter; we knew that if they killed seals in the water that they must be nearly all females that were going out to feed, for the males stay on the islands until they get ready to go away in the fall or winter. It was among the cows we first noticed the decrease, and as we never kill the cows on the islands, we knew they must be killing them in the water. (Aggei Kushen.)

There can be no question, in my opinion, about the ultimate result to the rookeries of marine sealing. If it is continued as it has been for the last two or three years, the seals will be so nearly wiped out of existence in a short time as to leave nothing to quarrel about, and an article of commerce that has afforded a vast amount of comfort and satisfaction to a large class of wearers and a large income to both American and British merchants will be a thing of the past. (Isaac Liebes.)

I am convinced that the decrease in the rookeries was caused entirely by open-sea sealing. (Abial P. Loud.)

There were no destructive agencies at work upon the island that would not have left the rookeries in better condition in 1890 than they were in 1870. Until the effects of the true agent of destruction began to be manifest there was an excess of male life on the islands sufficient to permit of an annual catch of 100,000 seals for an indefinite period without jeopardizing the rookeries. If it be remembered that the seals taken in the waters by hunters are chiefly females, that their young die with them, and that all of those killed are not secured, and if then an examination be made of the pelagic skins actually sold during the past twenty years, the real source of the depletion of the rookeries will be found. In my judgment such depletion was caused by pelagic sealing, and that it grew greater from year to year, as the number of so-called poaching schooners increased, and that its effects began to manifest themselves about 1885 or 1886. The depletion on both hauling and breeding grounds is accounted for by the fact that the catch of said sealers consists of at least 85 per cent cows. Said cows, when taken in the North Pacific, are in the majority of cases with pups, and in Bering Sea are so-called milking females. Whenever a milking cow is killed, her pup on the rookeries dies of starvation. In support of this fact last stated, the number of dead pups during the last four years I was upon the islands increased annually. The effect of the comparatively few raids upon the rookeries themselves, while injurious, bear but a small ratio to the enormous damage done by the pelagic hunting. Those in charge of the islands did not, when the decrease on the rookeries commenced, know exclusively the cause thereof. My opinion then was that it was caused by pelagic sealing, but I had been informed and believed that the United States Government intended to seize all such poaching vessels. Relying upon such information I authorized the taking of seals as before. The proper protection of seal life was not fully carried out in Bering Sea and the North Pacific by reason of England's interference, and the rookeries were thus depleted. (H. H. McIntyre.)

From statements made by personal acquaintances and friends, I became aware of a rapid decrease in seal life in Alaska, and reports of pelagic sealing, as made public through the press, combined with previous personal affairs as existing prior to 1882, leaves no possible doubt as to the cause of such decrease of seals. Pelagic sealing as practiced prior to the year 1882 had no apparent effect upon seal life, and even when to this was added the taking of a definite number year after year under lease from the United States Government, there was still a constant increase of seals observed. I am, therefore, fully confirmed in the belief that the decrease in their numbers is due solely to the indiscriminate killing at sea of all ages, regardless of sex, as practiced since 1884. (H. W. McIntyre.)

The seals have rapidly decreased since sealing vessels appeared, but before the inroads of these seal hunters there was no trouble in obtaining the full quota of the best grades of skins, as the herds previous to that time had been noticeably increasing. (John Malowansky.)

Q. To what do you attribute the decrease in the number of seals on the rookeries?—A. To the great number of cows killed by poachers, and consequently less pups are born on the rookeries.

Q. How do you know that cows have been killed by poachers?—A. I have handled and seen a great number of skins captured by the rev-

enue cutters from the poaching vessels, and there were very few male skins among them; also have seen among them a great number of unborn pups. Twice upon the rookeries I have seen cows killed and left there by the poachers. (Anton Melovedoff.)

I know of no other explanation than this: The cows are shot and killed when they go into the sea to feed and the pups die on the rookeries. This, I think, is the true solution of the vexed question, "What has become of the seals?" (Anton Melovedoff.)

Since 1883, however, there is said to have occurred a very material diminution of the seal life on the Pribilof Islands, due, as it is claimed, to a large and indiscriminate slaughter of these animals in the waters of Bering Sea and the Pacific Ocean. The cause assigned for this loss is undoubtedly the true one. If no other proof were forthcoming in relation to it, the large display of dead pups on the rookeries would in itself furnish all the evidence required. Such diminution could not, in my opinion, be the result of the yearly slaughter of skins. It is shown that an appreciable expansion of the rookeries took place after twelve or fourteen years of such slaughter, and I think this fact conclusively demonstrates that the number of seals which the law permitted to be killed each year was not greater than the known conditions of the seal's life would safely warrant. (J. M. Morton.)

From the experience gained, and observations made, during three killing seasons; from the information gleaned from men who have devoted their lives to the practical side of the seal question, and from the books and reports in the Government offices on the islands, I am able to say that, in my opinion, there is only one great cause of the decrease of the fur seal, and that is the killing of the females by pelagic hunting. (Joseph Murray.)

I believe this decrease is owing to the large number of vessels engaged in hunting the fur seal at sea, and the indiscriminate methods employed by these sealing vessels in taking skins. (Arthur Newman.)

The practice of pelagic seal hunting was followed by the Northwest Coast Indians from their earliest history, but amounted to so little as to be inappreciable on the islands. Even after white hunters engaged in it in a limited way our losses from this source were attributed to the marine enemies of the seals, and was so far overcome by the good management of the islands as to permit the growth of the herd to continue so long as it was limited to a few vessels and confined to the vicinity of the Oregon, Washington, and British Columbian coasts. But even before any considerable slaughter had taken place in the waters of Bering Sea, as early as 1882, it was noticed that the rookeries had stopped expanding, though they were treated in every way as they always had been. An examination of the London Catalogue of seal-skin sales shows that the "Victoria catch" already aggregated a very considerable number of skins, and now brings home the conviction that pelagic sealing, when confined almost wholly to the Pacific, is still a very dangerous enemy of seal life on the islands. After 1886 the force of pelagic hunters was greatly augmented, and became more and more aggressive, until they appeared in alarming numbers in Bering Sea in 1884 and 1885. In 1887 we were forced to commence taking smaller skins in order to obtain our quota and preserve enough breeding bulls. In 1888 they were still smaller, while in 1889 more than half of them were such as we would not have killed in former years; and we called the *attention of the* Treasury Department to the evident diminution of seal

life, and recommended that fewer seals be killed in future. There can be no question as to the cause of the diminution. It is the direct result of pelagic sealing, and the same destruction, if continued a few years longer, will entirely dissipate any commercial value in the rookeries, if it does not, indeed, annihilate them. (Gustave Niebaum.)

In my opinion the solution of the problem is plain. It is the shotgun and the rifle of the pelagic hunter which are so destructive to the cow seals as they go backward and forward to the fishing banks to supply the waste caused by giving nourishment to their young. At this time they are destroyed by thousands, and their young of but a few weeks old must necessarily die of starvation, for nature has provided no other means of subsistence for them at this time of life. (L. A. Noyes.)

Q. How do you account for it?—A. By the numbers, principally females, that are killed in the waters by marauders. (J. C. Redpath.)

I saw no diminution of seal life during my three years on the island. The outlines of the rookeries remained just about the same from year to year. I was told at the time that there had formerly been a large increase, and did not then understand why it did not continue, as every condition seemed favorable for it. There were, apparently, an abundance of bulls for service; every cow seemed to have a pup, and all were healthy and in good condition. No females were killed, and in the natural order of growth there ought to have been at this time a constantly increasing area covered with breeding rookeries. Yet such was not the case. The explanation of the matter came later, when we fairly awoke to the fact that our animals were being slaughtered by tens of thousands in the North Pacific. I knew in a commercial way from our sales catalogue that a very large number of "Victoria skins," as they were called, were being sent to market, and that this number grew constantly larger; but I did not then know, as I now do, that each skin sold represented a waste of two or three and perhaps even four or five seals to obtain it. Nor was any attention given to the now well-known fact that these animals were a part of our herd as wrongfully stolen from us, I believe, as my cattle would be if driven in and appropriated from the highway when lawfully feeding. (Leon Sloss.)

Since my residence on the Pribilof Islands I have kept a very careful watch of the progress of the events there, and have interviewed a great many connected with the seal industry. I am of the conviction that the reported decrease in seal life on these islands can be attributed to no other cause save pelagic sealing. While I was located at St. George Island in 1881 pelagic sealing was then and previous to that time had been of very little consequence, having very slight effect upon seal life. Not more than four or five vessels were engaged in pelagic sealing in 1881 in the waters of Bering Sea, and prior to that time a still fewer number were so engaged. But since 1881 this industry has grown yearly until now about a hundred vessels are destroying the seals in great numbers, and, as I am informed and believe, the great majority of those killed are females. Then, too, large numbers are killed in this way which are never recovered nor reported. (W. B. Taylor.)

Scarcity of seal can be attributed to no other cause than pelagic hunting and the indiscriminate shooting of seals in the open sea, both in the North Pacific and Bering Sea. (John C. Tolman.)

I am sure the decrease is caused by the killing of female seals in the open sea, and that if their destruction by the indiscriminate killing in

the open sea is permitted to continue it will only be a very short time until the herd is destroyed. (Charles T. Wagner.)

I have no doubt that it is caused by the killing of female seals in the water, and, if continued, will certainly end in their extermination. (M. L. Washburn.)

I am convinced that if open-sea sealing had never been indulged in to the extent it has since 1885, or perhaps a year or two earlier, 100,000 male skins could have been taken annually forever from the Pribilof Islands without decreasing the seal herd below its normal size and condition. The cause of the decrease which has taken place can be accounted for only by open-sea sealing; for, until that means of destruction to seal life grew to be of such proportions as to alarm those interested in the seals, the seal herd increased, and since that time the decrease of the number of seals has been proportionate to the increase in the number of those engaged in open-sea sealing. From 1884 to 1891 I saw their numbers decline, under the same careful management, until in the latter year there was not more than one-fourth of their numbers coming to the islands. In my judgment there is but one cause for that decline and the present condition of the rookeries, and that is the shotgun and rifle of the pelagic hunter, and it is my opinion that if the lessees had not taken a seal on the islands for the last ten years we would still find the breeding grounds in about the same condition as they are to-day, so destructive to seal life are the methods adopted by these hunters. (Daniel Webster.)

Deponent, by reason of his experience in the business, his observation, conversations with those physically engaged in catching and curing skins, and the custody of herds on the islands, feels justified in expressing the opinion that the numbers of the seal herds have, since the introduction of the open-sea sealing on a large scale, suffered serious diminution. The killing of large numbers of females heavy with young can not, in deponent's knowledge, but have that effect. (C. A. Williams.)

I made careful inquiry of the people on the islands, both native and white, and of those who were or had been employed as masters or mates on sealing vessels, and others interested one way or another in the capture of fur seals for food or for profit, and failed to find any of them but who admitted that the number of seals in Bering Sea was much less now than a few years since, and nearly all of them gave it as their opinion that the decrease in number was due to pelagic hunting, or, as they more frequently expressed it, the killing of females in the water. (W. H. Williams.)

DECREASE OF THE ALASKAN SEAL HERD.

After 1882 they seemed to stay about the same, as far as the number of breeders was concerned, as long as I was there. (John Armstrong.)

I ascertained by questioning those who had years of continuous experience with the seals that up to the year 1882 there was an annual expansion of the boundaries of the breeding grounds; that this was followed by a period of stagnation, which in turn was followed by a marked decadence from about 1885–86 down to the present time. (J. Stanley-Brown.)

I am unable to state whether the seals increased or not during my residence on St. Paul, but they certainly did not decrease, except, perhaps, there was a slight decrease in 1884. In all my conversations with

the natives—which were, of course, a great many—they never spoke of the seals being on the decrease, as they certainly would have done if such had been the case. (H. A. Glidden.)

While on St. Paul I do not think the number of seals increased, and in the last year (1884) I think there was a slight decrease. (J. H. Moulton.)

Upon the Commander Islands, as I have already said, the increase in seal life was constant for many years, but in 1890 we noticed a decided disturbance in the rookeries and a considerable decrease in their population. This we subsequently attributed, when the facts were ascertained, to pelagic sealing in the adjacent waters. (Gustave Niebaum.)

I noticed during this period no perceptible increase in the breeding rookeries on St. George. (B. F. Scribner, Treasury agent.)

ON PRIBILOF ISLANDS.

In 1882 there was no scarcity of killable seals. The men drove up as many every day as they could handle, and those selected for killing comprised only the choicest ones. (W. C. Allis.)

There seemed to be also a large surplus of full-grown bulls for rookery service, and enough escaped from the slaughter ground to keep the number good as the old ones passed the age of usefulness. I do not believe the condition of the rookeries nor the manner of driving and killing the seals at this time could have been improved. It was perfect in every respect, and the lessees, employees, and natives, as well as the seals, all appeared to be and were, I believe, contented and happy. In 1886 the conditions had somewhat changed. The natives complained that big seals were growing scarcer; that there were many dead pups on the rookeries, and the superintendent intimated to me that he did not like the outlook as compared with a few years previous, and said he thought either the number killed or the size of the animals taken for their skins would have to be reduced of killable seals, and the work went on as during my first year (1882) in the service. But the trouble of which they complained grew more serious in the following years, and I think it was in 1888 the superintendent told the bosses they must kill less large seals and more "yellow bellies," or 2-year-olds. In 1889 a very large proportion of the catch was made up of this class. It was then perfectly apparent to everybody, myself included, that the rookeries were "going to the bad" and that a smaller number must inevitably be killed the following year. (W. C. Allis.)

The aggregate size of the areas formerly occupied is at least four times as great as that of the present rookeries. (Report of American Bering Sea commissioners.)

I have noticed a great decrease in the numbers of the fur seals since 1887, both on the rookeries of St. Paul Island, which are much shrunken in the area covered by seals, and in the waters of the Pacific and Bering Sea. On the rookeries, ground formerly hauled over by seals is now grown up with a scattering of recent growth. (C. H. Anderson.)

The skins taken prior to 1886 weighed from 6 to 10 pounds each, averaging about 8 pounds per skin; but I understand from those who remained there on duty that much smaller ones were afterwards taken, because the large seals had become scarce and were needed for rookery service. (John Armstrong.)

From 1870 to 1884 the seals were swarming on the hauling grounds and the rookeries, and for many years they spread out more and more. All of a sudden, in 1884, we noticed there was not so many seals, and they have been decreasing very rapidly ever since. (Kerrick Artomanoff.)

There are not nearly as many seals on the coast as there were two or three years ago. (Johnny Baronovitch.)

There are certain physical as well as historical sources of information upon the island from which the relation of the present to the past condition of the rookeries can be very clearly made out.

(1) Not only upon, but immediately to the rear of, the area at present occupied by the breeding seals occur fragments of basalt whose angles have been rounded and polished by the flippers of seals. Among these latter rocks grass is found growing to an extent proportionate to their distances from the present breeding grounds, and further, the soil shows no recent disturbance by the seals. This rounding of the bowlders of the abandoned areas was not due to the impingement of sand driven by the wind. No geologist would be willing to risk his reputation by asserting that this rounding came from any such agency. The distinction between the result of sand-blast action and seals' flippers is very marked.

(2) A careful examination among the roots of the grass will often show the former presence of seal by the peculiar appearance of the soil, due to the excrementa of the seal and the occurrence of a thin mat of seal hair. The attention of Dr. George M. Dawson was called to such a felt of hair upon the summit of Hutchinson Hill, and both he and Dr. C. Hart Merriam collected specimens of it from among the grass roots at that locality.

(3) At the rear of the rookeries there is usually an area of mixed vegetation—an area the boundary of which is sharply defined, and between which and the present breeding grounds occurs a zone of grass of only a single variety. In the immediate vicinity of the present breeding grounds only scanty bunches are to be seen. These gradually coalesce as the line of mixed vegetation is approached. The explanation of this is that the seals were formerly so abundant as to destroy the normal mixed vegetation at the rear of the breeding grounds, and that the decrease of the seals has been followed by the encroachment of the uniform variety of grass.

(4) The statements made to me by competent observers who have lived upon the islands for years all agree that the shrinkage in the breeding area has been rapid during the past five or six years.

After observing the habits of seals for a season, I unhesitatingly assert that to satisfactorily account for the disturbance to vegetable life over areas whose extent is visible even to the most careless and prejudiced of observers, would require the presence of from two to three times the amount of seal life which is now to be found upon the islands. That there has been enormous decrease in the seals there can be no question. (J. Stanley-Brown.)

Have observed carefully the areas occupied by the seals on the rookeries and hauling-out grounds, especially at Northeast Point and the Reef, on St. Paul Island, in 1884, 1885, 1886, and 1891, and on both rookeries the areas formerly occupied by seals have greatly decreased, so much so that at first appearance it seemed, in 1891, as if the hauling-out grounds had been entirely deserted. Subsequent examination disclosed the fact that this was not strictly true, there still being a small *number of male* seals left on the grounds. Have also observed that the

seals are much more scattered on the breeding rookeries than in former years (1884, 1885, 1886); also that the number of seals in the water has proportionately decreased, and that they have grown very much more shy and difficult to approach. Without presuming to be absolutely correct, would estimate the number of seals present at St. Paul Island during the year 1891 to about 10 per cent of the number there in former years of observation—1884, 1885, 1886. (John C. Cantwell.)

I did not notice any falling off in the size of the rookeries from the landmarks to which they came when I first saw them during the first two years I was on the island, and all agreed, in discussing the matter, that the seals had never been more numerous than they were; but in the following years, and particularly in 1888 and 1889, no other opinion was heard than that the animals had greatly diminished, and in this opinion I fully coincided. (Henry N. Clark.)

During the seasons of 1890 and 1891, I was in command of the revenue cutter *Rush*, in Bering Sea, and cruised extensively in those waters around the seal islands and the Aleutian group. In the season of 1890 I visited the islands of St. Paul and St. George, in the months of July, August, and September, and had ample and frequent opportunities of observing the seal life as compared with 1870. I was astonished at the reduced numbers of seals and the extent of bare ground on the rookeries once teeming with seal life. In 1890 the North American Commercial Company were unable to kill seals of suitable size to make their quota of 60,000 allowed by their lease, and in my opinion, had they been permitted to take 50,000 in 1891, they could not have secured that number if they had killed every bachelor seal with a merchantable skin on both islands, so great was the diminution in the number of animals found there. (W. C. Coulson.)

I arrived with my command at St. Paul Island June 7, 1891. At that date very few seals had arrived, and but a small number had been killed for fresh food. On the 12th of June, 1891, we were at St. George Island and found a few seals had been taken there, also for food, the number of seals arriving not being enough to warrant the killing of any great number. During that year I was at and around both these islands every month from and including June until the 1st day of December (excepting October), and at no time were there as many seals in sight as in 1890. I assert this from actual observation, and it is my opinion we will find less this year. (W. C. Coulson.)

During my annual cruising in Bering Sea and to and from the Pribilof Islands I have carefully noted the number and appearance of seals in the water and on the breeding rookeries from the deck of my vessel, and have also repeatedly visited the hauling grounds from year to year, and it was about 1884 and 1885 that bare spots began to appear on the rookeries, so much so that myself and the other officers often spoke of it and discussed the causes therefor. The decrease in number of seals both on the Pribilof Islands and in the waters of Bering Sea and North Pacific has been very rapid since 1885, especially so in the last three or four years, and it is my opinion that there is not now more than one-third of the number of seals in these waters and on the islands that there were ten years ago. (Leander Cox.)

During my last visits to the islands I observed a very marked diminution in the number of seals thereon as contrasted with the herd on the rookeries five or six years previously. I am familiar with the area and topography of the various rookeries on the islands, and have observed

that spaces formerly occupied by seal herds are now vacant and parts of them covered with grass. This diminution was particularly noticeable in 1887 and 1888, the last two years' visit to the islands. (James H. Douglas.)

For many years prior to 1890 I have observed the rookeries from my ship and also from the islands. The first decrease in the number appearing on the rookeries and in the surrounding sea that I particularly noticed was in the summer of 1884, and it has become more marked from year to year since. For the last three or four years their disappearance has been very marked. In October, 1890, I made a trip from Unalaska to St. Michaels. When about 20 miles south of St. George we commenced to watch for seals passing the Zapadnie rookery close inshore along the west end of St. George Island to Otter Island and Seal Island rock; thence to Northeast Point, about a mile and a half offshore. When we started, I requested the officers to keep a sharp lookout and to report if they saw any seals in the water. I was on deck most of the time myself also, and we only saw two seals in the whole run; whereas ten years ago, when on a similar voyage, seals were so plentiful that it was impossible to count them. From my long observation I do not think there are as many seals by two-thirds now annually arriving on the islands or in those waters as there were ten years ago, when I first commenced to notice that they were decreasing. By this statement I mean to say that only one-third as many are now to be seen as formerly. (M. C. Erskine.)

Seals have decreased in numbers very rapidly in the last few years, and to anyone who saw the breeding rookeries as I did in 1880 the change is most wonderful. (C. L. Fowler.)

It was on the breeding rookeries and among the cows that I first began to notice the decrease in seal life, and I do not think there were more than one-fourth as many cows on the breeding rookeries in 1891 as were there in 1887. (C. L. Fowler.)

I have been a resident of the seal islands for the past ten years; formerly assistant agent of the Alaska Commercial Company, now agent of the North American Company, and during that time was engaged in the taking of seals. I have listened to the testimony of J. C. Redpath, as above, and fully concur in all that he has said concerning seal life, with the exception that the number of seals on the islands this season are, in my judgment, not more than one-fourth of what they were in 1887. (C. L. Fowler.)

In those days (from 1869 to 1882 or 1883) we used to get plenty of seals on the Zoltoi sands near the Reef rookery, and now there are none there. It was in 1884 that I first noticed a decrease in the seals, and it has been a steady and a very rapid decrease ever since 1886, so that at present there are not one-fourth as many seals on the island as there was every year from 1869 to 1883. (John Fratis.)

In 1889 I made careful observations of the rookeries on St. Paul Island and marked out the areas covered by the breeding grounds; in 1890 I examined these lines made by me the former year, and found a very great shrinkage in the spaces covered by breeding seals. In 1889 it was quite difficult for the lessees to obtain their full quota of 100,000 skins; so difficult was it in fact, that in order to turn off a sufficient number of 4 and 5 years old males from the hauling grounds for breeding purposes in the future, the lessees were compelled to take about *50,000 skins of* seals of 1 or 2 years of age. I at once reported this

fact to the Secretary of the Treasury, and advised the taking of a less number of skins the following year. Pursuant to such report the Government fixed the number to be taken as 60,000, and further ordered that all killing of seals upon the islands should stop after the 20th day of July. I was further ordered to notify the natives upon the Aleutian Islands that all killing of seals while coming from or going to the seal islands was prohibited. These rules and regulations went into effect in 1890, and pursuant thereto I posted notices for the natives at various points along the Aleutian chain, and saw that the orders in relation to the time of killing and number allowed to be killed were executed upon the islands. As a result of the enforcement of these regulations, the lessees were unable to take more than 21,238 seals of the killable age of from 1 to 5 years during the season of 1890, so great had been the decrease of seal life in one year, and it would have been impossible to obtain 60,000 skins even if the time had been unrestricted. (Charles J. Goff.)

The Table A, appended to this affidavit, shows how great has been the decrease on St. Paul Island's hauling grounds, bearing in mind the fact that the driving and killing were done by the same persons as in former years, and were as diligently carried on, the weather being as favorable as in 1889 for seal driving. I believe that the sole causes of the decrease is pelagic sealing, which, from reliable information, I understand to have increased greatly since 1884 or 1885. Another fact I have gained from reliable sources is that the great majority of the seals taken in the open sea are pregnant females or females in milk. It is an unquestionable fact that the killing of these females destroys the pups they are carrying or nursing. The result is, that this destruction of pups takes about equally from the male and female increase of the herd, and when so many male pups are killed in this manner, besides the 100,000 taken on the islands, it necessarily affects the number of killable seals. In 1889 this drain upon male seal life showed itself on the islands, and this, in my opinion, accounts for the necessity of the lessees taking so many young seals that year to fill out their quota. As soon as the effects of pelagic sealing were noticed by me upon the islands I reported the same, and the Government at once took steps to limit the killing upon the islands, so that the rookeries might have an opportunity to increase their numbers to their former condition; but it will be impossible to repair the depletion if pelagic sealing continues. I have no doubt, as I reported, that the taking of 100,000 skins in 1889 affected the male life on the islands and cut into the reserve of male seals necessary to preserve annually for breeding purposes in the future, but this fact did not become evident until it was too late to repair the fault that year. Except for the numbers destroyed by pelagic sealing in the years previous to 1889 the hauling grounds would not have been so depleted, and the taking of 100,000 male seals would not have impaired the reserve for breeding purposes or diminished to any extent the seal life on the Pribilof Islands. Even in this diminished state of the rookeries in 1889 I carefully observed that in the majority of cases the 4 and 5 year old males were allowed to drop out of a "drive" before the bachelors had been driven any distance from the hauling grounds. These seals were let go for the sole purpose of supplying sufficient future breeders. (Charles J. Goff.)

I believe there has been a great decrease in the numbers of the fur-seal species. I do not believe that there are now one-tenth as many fur seals frequenting the Pribilof Islands as there were ten years ago.

Nine or ten years ago, when lying off the Pribilof Islands in the fall, the young seals used to play in the water about the vessels in large numbers; in going to the westward in the month of May many seals were always to be seen between Unalaska and the Four Mountain islands. In midsummer, when making passages between Unalaska and the Pribilof Islands, used to see large bodies of fur seals feeding; they were invariably to be met with most numerously about 60 miles northwest true from Unalaska, and from there up to and from the feeding grounds. When last I visited the rookeries, three years ago, in 1889, I noticed a great shrinkage in the area covered by seals on the rookeries. (Charles J. Hague.)

In 1886 and 1887 there appeared to be enough seals, and the men were kept pretty steadily at work after the first few days of the season until the catch was completed. Good-sized skins were taken in these years, and there was no trouble in getting them, but large seals grew very scarce on the island in 1888, and still more so in the three following years. I am sure the size of the rookeries on St. Paul Island and the number of seals on them in 1891 were less than one-half their size and number in 1886. (Alex. Hansson.)

Coincident with the increase of hunting seals in the sea there was an increase in the death rate of pup seals on the rookeries; also a perceptible diminution of female seals. As hunting increased it became self-evident, even to the most casual observer, that the rookeries were becoming devastated. It is positively a fact that there are not near as many seals occupying the rookeries now, at the present time, as there were when I first saw the islands. The vacant spaces on the breeding and hauling grounds have increased in size from year to year since 1884, and have been very noticeable for the last four or five years. When I first went to the seal islands the seals were actually increasing in numbers instead of diminishing. Two facts presented themselves to me later on: First, seals were arriving each year in diminished numbers; second, at the same time that the female seals were decreasing in numbers the number of dead pups on the rookeries were increasing. The indiscriminate slaughter of seals in the water has so depleted their number that the company is at present unable to get their quota of skins on the island as allowed per contract with the Government, and is restricted to such an insignificant number that it is not enough to supply food to the native population of the islands. It is an indisputable fact that large portions of the breeding rookeries and hauling grounds are bare, where but a few years ago nothing but the happy, noisy, and snarling seal families could be seen. * * * The driving rookeries also necessarily have suffered, as witness the difference in the catch, a drop from 100,000 to about 20,000 in 1890. (W. S. Hereford.)

I have been employed on the seal islands since 1882, have resided upon them continuously for ten years, and have a personal knowledge of the seal life as it exists on the islands and in the waters surrounding them. There was less than one-third the number of seals on the islands last year than in 1882. The decrease in the number of seals coming to the islands was first noticed and talked about two or three years after I first came to live here; and since 1887 the decrease has been very rapid. A careful inspection of the rookeries each returning season since 1887 showed that the cows were getting less and less, although it was a rare thing to find a cow seal that did not have a pup at her side. *(Edward Hughes.)*

Ten or twelve years ago the rookeries and sea were full of seals, but now there are not a great many. We used to kill 85,000 in less than two months' time on St. Paul Island, and our people earned plenty of money to buy everything they wanted, and in the winter we killed 2,000 or 3,000 male pups for food and clothing. Now we are not allowed to kill any more pups, and only 7,500 male seals for food, and the people are very much worried to know what is to become of them and their children. (Jacob Kotchootten.)

I remember the first time I noticed a decrease of seals on the rookeries, about seven or eight years ago, and the seals have become fewer every year since. We used to kill 85,000 seals on St. Paul Island in less than sixty days' time until 1890, when they became so few we could not take more than about one-fourth of that number in the same length of time. (Nicoli Krukoff.)

All our people know the seals are getting scarcer every year, and we think it is because of the schooners coming in and shooting the cows in the sea. (Nicoli Krukoff.)

About 1885 a decrease was observed, and that decrease has become more marked every year from 1885 to the present time. (Aggei Kushen.)

There are not one-fourth as many seals now as there were in 1882, and our people are very much alarmed to know what is to become of them after the seals are killed off. If the seals decrease as fast as they have during the past five or six years there will be none left in a very short time for us to live upon. (Aggei Kushen.)

During the time from 1885 to 1889 there was a very marked decrease in the size of the breeding grounds on St. Paul Island, and from 1887 to 1889 I also noticed a great decrease in the areas covered by the rookeries on St. George Island. (Abial P. Loud.)

In his report of 1886 and 1887 George R. Tingle, special Treasury agent in charge of the seal islands, reported having measured the rookeries on the islands, and that the seals had largely increased in number, giving the increase at about 2,000,000. From this report I dissented at the time, as I was unable to see any increase, but, on the contrary, a perceptible decrease, in the rookeries. I expressed my views to many on the islands and all agreed that there had been no increase in the seal life. The measurements of the rookeries on which Mr. Tingle relied were made with a common rope by ignorant natives while the seals were absent from the islands, the grounds covered by them being designated by Mr. Tingle from memory. (Abial P. Loud.)

During the three years following 1882, namely, 1883, 1884, and 1885, I was not upon the islands. Upon my return in 1886 I noticed a slight shrinkage in the breeding areas, but am unable to indicate the year of the period of my absence in which the decrease of breeding seals began. From the year 1886 to 1889, inclusive, my observation was continuous, and there was a greater decrease of the seals for each succeeding year of that period in a cumulative ratio, proportionate to the number of seals killed by the pelagic sealers. (H. H. McIntyre.)

In 1886 I again assumed personal direction of the work upon the islands, and continued in charge to and including 1889. And now, for the first time in my experience, there was difficulty in securing such skins as was wanted. The trouble was not particularly marked in 1886,

but increased from year to year to an alarming extent, until in 1889, in order to secure the full quota and at the same time turn back to the rookeries such breeding bulls as they seemed to absolutely need, we were forced to take fully 50 per cent of animals under size, which ought to have been allowed one or two years more growth. Concerning this matter I reported to the Alaska Commercial Company, under date of July 16, 1889, as follows: "The contrast between the present condition of seal life and that of the first decade of the lease is so marked that the most inexpert can not fail to notice it. Just when the change commenced I am unable from personal observation to say, for as you will remember I was in ill health and unable to visit the islands in 1883, 1884, and 1885. I left the rookeries in 1882 in their fullest and best condition and found them in 1886 already showing slight falling off, and experienced that year for the first time some difficulty in securing just the class of animals in every case that we desired. We, however, obtained the full catch in that and the two following years, finishing the work from the 24th to the 27th of July, but were obliged, particularly in 1888, to content ourselves with smaller skins than we had heretofore taken. This was in part due to the necessity of turning back to the rookeries many half-grown bulls, owing to the notable scarcity of breeding males. I should have been glad to have ordered them killed instead, but under your instructions to see that the best interests were conserved, thought best to reject them. The result of killing from year to year a large and increasing number of small animals is very apparent. We are simply drawing in advance upon the stock that should be kept over for another year's growth." (H. H. McIntyre.)

Q. How does the number of seals on the rookeries this year compare with the number five years ago?—A. The number now is about one-fourth of what they were then. (Noen Mandregin.)

In 1887 I began to notice a diminution in the number of seals arriving at the islands, which was due to the indiscriminate killing by sealing vessels in the open sea, some 50 or 60 miles distant. While we still obtain about the usual number of skins, many more are taken from the younger animals than formerly, and are somewhat inferior in quality. (John Malowausky.)

From 1885, which was about the time the sealers appeared in the waters, the decrease in seal life was rapid, and the natives commenced saying "no females," "no females," until now we are confronted with depleted rookeries and probable extermination. (John Malowansky.)

Q. Have you noticed any perceptible difference in the number of seals on rookeries from one year to another?—A. Yes.

Q. About how much less is the number of seals during the past year than they were six years ago?—A. The number of seals this year is about one-fourth of what they were six years ago, and about one-half of what they were last year.

Q. In what way do you form your above opinion as to the relative number of seals on the rookeries?—A. By the fact that many spaces on the rookeries which were formerly crowded are now not occupied at all. (Anton Melovedoff.)

About 1886 I noticed that the lines of former years were not filled with cows, and every succeeding year since then has shown a more marked decrease. In 1889 the bachelors were so few on the hauling grounds that the standard weight of skins was lowered to 5 pounds,

and hundreds were taken at only 4 pounds in order to fill the quota of 100,000. (A. Melovedoff.)

Until the schooners came into Bering Sea the rookeries were always well filled, and many of them had grown steadily for years, when it was no uncommon thing for the lessees to take the quota of 85,000 seals on St. Paul Island between June 1 and 20 of each year. After 1884, when the original two or three sealing vessels had grown to be a well-organized fleet, we found a steady decrease of seals on all the rookeries, and we found it difficult to secure the quota of skins, and in 1889 the lessees had to lower the standard of weight lower than ever before in the history of the island. (Simeon Melovidov.)

From the year 1874 till 1885 we were able to get from St. George and St. Paul islands 100,000 male seals within the period known as the sealing season of six weeks, from the 10th of June to the 1st of August, and still leave a large percentage of marketable seals. In 1885, and in every year thereafter until I left in 1887, there was a marked decrease in the number of marketable skins that could be obtained in each year during the sealing season. We were able, down to the last year (1887), to get our total catch of 100,000 seals, but in order to get that number we had to take what in previous years we would have rejected, namely, undersized skins, i. e., the skins of young seals. Prior to 1887 we had endeavored to take no skins weighing less than 8 pounds, but in order to make up our quota in the last-mentioned year we had to take skins weighing as little as 6½ pounds to the number of several thousands. (T. F. Morgan.)

In the years 1885, 1886, and 1887 my attention was attracted not only to a diminution in the number of killable seals appearing on the island, but to a decrease in the females as well. Up to the year 1884 the breeding space in the rookeries had increased, and from that year down to 1887, when I left the island, the acreage covered by the rookeries which were occupied by seals constantly diminished. (T. F. Morgan.)

My attention was called to the decrease of seals and the depletion of the rookeries at an early date after my arrival. I attempted to study the habits and conditions and to note the numbers of seal on the several rookeries and hauling grounds. The natives and employees of the Alaska Commercial Company were unanimous in their opinion that the seal had been decreasing steadily and rapidly since 1884. I reported the fact to Agent Goff, who had found similar conditions existing on St. Paul, and he so reported to the Department, and suggested that not more than 60,000 seals should be taken in any one season in future. In pursuance of instructions from Agent Goff, I left St. George Island on the 19th of July, 1890, and landed on St. Paul Island on the 20th of the same month, and remained there until August, 1891. During the month of July, 1890, I walked over the rookeries and hauling grounds of St. Paul Island, and Agent Goff pointed out to me the lines to which in former years the seals hauled, and the large areas which they covered; and then he called my attention to the small strip covered by seals on that date, which was smaller than the year previous. Agent Goff stopped the killing of seals by the lessees on and after the 20th of July, 1890, because of the depleted condition of the hauling grounds; and I fully concurred in his order and action. I spent the sealing season of 1891 on St. Paul Island, and pursuant to instructions of Agent Williams, I gave my time and special attention to the study of the condition of the rookeries, both the breeding and hauling grounds. I visited

the rookeries daily from the 7th to the 22d of July—during the period when the rookeries are fullest and at their best—and I carefully noted their condition and the number of seals; the number of cows to the family, and the number of idle, vigorous bulls upon each rookery. (Joseph Murray.)

Upon my first visit to the rookeries and hauling grounds of the island of St. Paul my attention was attracted to the evidences of recent and remote occupancy by the seals. Marked differences were noticeable in the appearance of vegetation on large areas formerly occupied as breeding and hauling grounds, while near the water's edge, more recently occupied, the ground was entirely bare of vegetation, enabling one to trace the gradual decrease of areas occupied during the last six to eight years. My examination of the rookeries on St. Paul and St. George during the years 1890, 1891, and 1892 enabled me to trace the yearly decreasing area occupied by the fur seals on these islands. Aside from the evidences of deserted rookeries and hauling grounds shown by native inhabitants of each island, the grounds occupied in former years were now deserted and grass grown. The silent witness of the deserted rookeries confirms the testimony of the resident agents of the lessees of the islands and of the native inhabitants that the number of seals began to decrease with the advent of pelagic sealing, and that the yearly decrease has been in proportion with the yearly increase in the number of vessels engaged in that enterprise. (S. R. Nettleton.)

The decrease in the number of seals coming to the islands in the last three or four years became so manifest to everyone acquainted with the rookeries in earlier days that various theories have been advanced in an attempt to account for the cause of this sudden change, and the following are some of them: (1) "A dearth of bulls upon the breeding rookeries;" (2) "Impotency of bulls caused by overdriving while they were young bachelors," and (3) "An epidemic among the seals." (L. A. Noyes.)

Q. Have you noted any perceptible difference in the number of seals on the rookeries from one year to another? If so, what changes have you observed?—A. Within the last four or five years I have observed a decided decrease in the number of seals on the rookeries.

Q. In what proportion have the seals decreased within the time mentioned?—A. As far as my judgment goes, I should say at least one-half. (J. C. Redpath.)

As the schooners increased the seals decreased, and the lines of contraction on the rookeries were noticed to draw nearer and nearer to the beach, and the killable seals became fewer in numbers and harder to find. In 1886 the decrease was so plain that the natives and all the agents on the islands saw it and were startled, and theories of all sorts were advanced in an attempt to account for a cause. (J. C. Redpath.)

I had no difficulty in getting the size and weight of skins as ordered, nor had my predecessors in the office, up to and including 1884. The casks in which we packed them for shipment were made by the same man for many years, and were always of uniform size. In 1885 these casks averaged about 47½ skins each, and in 1886 they averaged about 50⅘ skins each, as shown by the records in our office. After this date the number increased, and in 1888 they averaged about 55⅝ skins per *cask, and in* 1889 averaged about 60 skins per cask. These latter were

not such skins as we wanted, but the superintendent on the islands reported that they were the best he could get. (Leon Sloss.)

The number of seals on the Pribilof Islands is decreasing. I saw positive proof of this on St. Paul Island last season. (Z. L. Tanner.)

I had an excellent opportunity to observe some of the seal rookeries during my first visit to the islands, and spent much time in studying the habits of the seals, both on the rookeries and in the adjacent waters. I was particularly impressed with the great numbers to be seen, both on land and in the water. During the summer of 1889 the *Rush* was engaged cruising in pursuit of vessels engaged in illegal sealing, so that our anchorages off the seal rookeries that season were short and infrequent, hence I did not have the opportunity to observe them as closely on land as the preceding year. During 1890 the *Rush* was not engaged in preventing sealing outside the shore limit, and we spent much time in full view of the seal rookeries and cruising about the seal islands, and I also made frequent visits to the breeding grounds. The deserted appearance of the rookeries and the absence of seals in the water was very noticeable and was a matter of general remark among the officers of the vessel who had been on former cruises. Very large tracts of the rookeries which I had formerly seen occupied by the seals were entirely deserted, and the herds were much smaller than those of 1888. My attention was also called, by those conversant with the facts, to the grass growing on the inshore side of some of the rookeries, and to the three different shades of grass to be seen, indicating the spaces that had not been occupied by the seals for several years, owing to their diminished number. The darker shade showed where the growth first commenced, and a lighter shade for each succeeding year. There were three or four differently shaded growths, reaching down to the sand of the rookeries, and on that portion of the rookeries occupied by seals they were not lying near as compact as in 1888. In our frequent passages during 1890 between the Aleutian group and the seal islands we sometimes made an entire trip without seeing a seal. This was entirely different from the experience of preceding years, indicating a great falling off of seal life. (Francis Tuttle.)

In the year 1880 I thought I began to notice a falling off from the year previous of the number of seals on Northeast Point rookery, but this decrease was so very slight that probably it would not have been observed by one less familiar with seal life and its conditions than I; but I could not discover or learn that it showed itself on any of the other rookeries. In 1884 and 1885 I noticed a decrease, and it became so marked in 1886 that everyone on the islands saw it. This marked decrease in 1886 showed itself on all the rookeries on both islands. Until 1887 or 1888, however, the decrease was not felt in obtaining skins, at which time the standard was lowered from 6 and 7 pound skins to 5 and 4½ pounds. The hauling grounds of Northeast Point kept up the standard longer than the other rookeries, because, as I believe, the latter rookeries had felt the drain of the open-sea sealing during 1885 and 1886 more than Northeast Point, the cows from the other rookeries having gone to the southward to feed, where the majority of the sealing schooners were engaged in taking seal. (Daniel Webster.)

In pursuance of Department instructions to me of May 27, 1891, I made a careful examination during the sealing season of the habits, numbers, and conditions of the seals and seal rookeries, with a view of reporting to the Department from observation and such knowledge on the subject

as I might obtain whether or not, in my opinion, the seals were diminishing on the Pribilof Islands; and if so, the causes therefor. As a result of such investigation, I found, from the statements made to me by the natives, Government agents, and employees of the lessees, some of whom had been on the islands for many years, that a decrease in the number of seals had been gradually going on since 1885, and that in the last three years the decrease had been very rapid. A careful and frequent examination of the hauling grounds and breeding rookeries by myself and assistant agents during the months of June, July, and August showed that the seals had greatly diminished in number. We found large vacant spaces on all the rookeries, which in former years during these months had been covered by thousands of seals. Prior to 1888 the lessees had been able to take 100,000 skins from male seals, but I am clearly of the opinion that not more than one-third of that number of merchantable skins can be taken during the year 1891. (W. H. Williams.)

DECREASE OF SEALS.

Management of rookeries not the cause.

In studying the causes of diminution of seal life, there were found a variety of actual and possible sources of destruction which are effective in varying degrees. Fortunately, the most important of these sources were directly under my observation, and the following facts presented themselves for consideration: The restrictions upon the molestation of the breeding grounds and upon the killing of females has been imperative both on the part of the Government and lessees since the American ownership of the islands, so that in the taking of seals no injury could possibly have occurred to the females and bulls found thereon. For some years past the natives were permitted to kill in the fall a few thousand male pups for food. Such killing has been prohibited. It is not apparent how the killing of male pups could have decreased the number of females on the breeding grounds. (J. Stanley-Brown.)

If the seals were as numerous to-day on the Pribilof Islands and the manner of driving and killing conducted in the same manner as during my experience there, 100,000 male seals of from 2 to 4 years of age could be taken from the hauling grounds annually for an indefinite period without diminution of the seal herd. (Charles Bryant.)

Because of the manner of killing seals on the islands, the precautions taken to kill only males from 2 to 5 years, and the careful limitation of the numbers taken, I am fully convinced that the taking of seals on the Pribilof Islands could never affect the numbers of the seal herd or deplete the rookeries. (S. N. Buynitsky.)

I was in the employ of the Alaska Commercial Company, the former lessees of the seal islands, and their instructions were to use the utmost care in taking their quota of seals, so that there might be no diminution in number from year to year, and I personally know those instructions were rigidly enforced. (Leander Cox.)

If no other agency is at work in destroying seal life, 100,000 bachelor seals can be taken from the Pribilof Islands yearly for an indefinite period, provided the rookeries were in the same condition they were in 1871. Of this I am convinced from the fact that the seals continued to increase during all the time I was upon the islands, when 100,000 were killed every year except one, when 95,000 were taken. (Samuel *Falconer.)*

The management of the sealeries upon Copper Island, under Russian occupation, was left wholly to the native chiefs and ignorant laborers of the Russian-American Company. The work of killing the seals and curing the skins was done by them in a very unsystematic, careless way; but even then it was understood that as the seals are polygamous the surest way to secure an increase of the herd was to kill off surplus males and spare the females, and this was systematically practiced, resulting, as far as I am aware, most satisfactorily. After the expiration of the franchise of the Russian-American Company, in 1867 I think it was, and their abandonment of the island, and the execution of the lease to Hutchinson, Kohl & Co., in 1871, several different parties visited the island, killed seals injudiciously, and inflicted great injury upon the rookeries. They were restrained to some extent by the natives from indiscriminate slaughter, but I have no doubt they killed more males than they ought to have done, and perhaps also some females. Upon my arrival upon the island, in 1871, the native chief told me that the seals were not as plentiful as they had been formerly. I announced that we intended to secure 6,000 skins that year. They protested that it was too many, and begged that a smaller number be killed for one year at least. We, however, got the 6,000 skins as proposed, and an almost constantly increasing number in every subsequent year as long as I stayed on the islands, until in 1880 the rookeries had so developed that about 30,000 skins were taken without in the least injuring them. This is proved by the fact that the increase for the next ten years allowed still larger numbers to be killed, amounting, I think, in one of the years of the second decade of the lease to about 40,000 skins. In order to secure uniformity in the methods pursued respectively upon the Pribilof group and Commander Islands, the respective lessees of the two interests sent Capt. Daniel Webster, an expert sealer of many years' experience in the business, and who was at the time in the service of the Alaska Commercial Company at St. Paul Island, to assist and instruct me through the summer of 1874 in the best manner of handling seal droves, salting skins, and generally in the conduct of the business. In working under his direction, I found that the methods pursued by the respective parties upon the different sealeries did not differ in any essential feature. The main object in both places was to select good skins for market and spare all female seals and enough vigorous bulls to serve them. When the supply of bulls is more than enough I have no doubt the number of offspring is diminished. The bulls, when overnumerous, fight savagely for the possession of the cow seals, and unintentionally destroy many young in their conflicts. The healthiest condition of a rookery is no doubt when, under the laws of polygamous reproduction for this species, the proportion of the sexes is properly balanced. (C. F. Emil Krebs.)

Following the surrender of occupancy of these islands by the Russian-American Company in 1868, the sealeries were left open to all parties, and various expeditions visited them unrestricted by any governmental control. Their catches amounted in 1868 to about 15,000, in 1869 to about 20,000, and in 1870 to about 30,000 skins. In 1871 the Russian Government executed the lease to Hutchinson, Kohl & Co., and it was found necessary to restrict the killing for this year to about 6,000 skins, because the rookeries had been largely depleted by the excessive killing, unwise methods, and heedless husbandry. The result of improved methods showed themselves at once, and the rookeries steadily increased in size and number of occupants. We were thus enabled to procure an almost constantly increasing number of skins

from year to year during the whole term of our lease. We were unrestricted as to the numbers to be taken, and after the first two years of the lease were urged by the Russian authorities upon the islands to take more than we wanted, in view of the condition of the seal-skin market. I revisited the islands on various occasions subsequent to 1871, and my observations confirmed the fact that we were moving in the right direction to secure an increase of the rookeries. The experience of the whole term of the lease proves conclusively that our policy in conducting the business was a wise one, and that our manner of handling, managing, and killing the seals was in every respect what it should have been. This policy was predicated upon the custom of the Russian-American Company, observed during many years and strengthened by my own actual experience in conducting the business of taking seals upon the Pribilof Islands in 1867, 1868; and 1869, and more particularly during the season of 1868, when there was unrestricted sealing done by various parties regardless of the future of the rookeries. The pernicious effects of the methods pursued by them were at once observed, and measures immediately taken by me, aided by the natives, over whom I had complete control, to correct their practices and bring them within reasonable customs already proved efficacious in preserving the rookeries from annihilation. (Gustave Niebaum.)

If the right proportion is maintained between the sexes, the greatest possible number of progeny is assured. As long as we were able to keep exclusive control, undisturbed by outside influences, we maintained the steady increase of the herd and profitable returns from the industry. When outside parties, beyond our jurisdiction, carried on their destructive work to any considerable extent, the equilibrium of the sexes was destroyed, any calculation of those in charge of the islands was nullified or miscarried, and the speedy decrease and ultimate destruction of the seals and sealing industry made certain. (H. H. McIntyre.)

We protect and take good care of the seals, and if they were not killed in the sea we could make them increase upon the islands so that they would be as many as before. (A. Melovedoff.)

We can care for and protect the mature seals as well as the cattle on the ranges are cared for and protected, and if they could be guarded from the hunters in the sea we could by good management again make the rookeries as large as before. (S. Melovidov.)

Naturally the cause of this diminution was a matter of interest and inquiry. It was not evident that it was from causes incident to the taking of the seals upon the island. The greatest care was exercised in the driving. Under precisely similar conditions the herd had increased in former years. The number of skins originally apportioned to St. George Island was reduced at an early date, and only increased in proportion to the rookeries' expansion. No disturbance of the rookery was permitted, even the presence of dogs and use of firearms being prohibited during the presence of the seals. (T. F. Morgan.)

The management of the rookeries the first fifteen years of the Alaska Commercial Company's lease resulted in a large increase of seals. The same business management continued and the same system was pursued to the end of the term, yet in the last five years the rookeries fell off. Clearly it was through no fault of the company, and resulted from some cause beyond their control. I do not think the Alaska Commercial Company made any mistakes in managing the seal herd. They

handled them in every respect as I would have done if they had been my own personal property and as I would do if they were now to come into my hands. If they erred in any particular in their management, it was in their futile attempt in 1888 and 1889 to stop the waste of the seal life at the island spigot while it was running out at the bunghole of pelagic sealing. The record shows that we did not finish the catch as early in 1885 as had been done in former years. I do not think this was from any lack of seals, but was caused by greater care in making our selection of animals to be killed. (Leon Sloss.)

I again visited St. Paul Island and remained there several days in the summer of 1885, but saw no evidence then or when formerly on the island to lead me to think that the lessees were damaging the rookeries or doing anything different from what a judicious regard for the future of the industry would dictate. In giving this evidence I am as free from prejudice as is possible when entertaining, as I do, a feeling that the late lessees treated me in some measure unjustly, nor have I any interest whatever in the seals or the products of the sealeries. (George H. Temple.)

Raids on rookeries not the cause.

It may be worth while to add that the suggestion has been made that the decrease on the number of seals is due to piratical raids upon the islands themselves during the breeding season. While it is unquestionably true that such raids have occasionally occurred during the past, and that some skins have been obtained in that way, the number of these is so trifling in comparison with the annual pelagic catch as not to affect in any way the question under consideration. It is also difficult for one familiar with the rookeries and habits of the seal to conceive of a raid being made without its becoming known to the officers in charge of the operations upon the islands. The "raid theory," therefore, may be dismissed as unworthy, in our judgment, of serious consideration. (Report of American Commissioners.)

The statistics which I have examined, as well as all the inquiries made, show that in the raids upon the rookeries themselves by marauders the loss of seal life has been too unimportant to play any part in the destruction of the breeding grounds. The inhospitable shores, the exposure of the islands to surf, the unfavorable climatic conditions, as well as the presence of the natives and white men, will always prevent raids upon the islands from ever being frequent or effective. (J. Stanley-Brown.)

During my stay upon St. George Island several attempts were made by poachers to get on shore and steal the seal, but they succeeded, as far as I am aware, only on three occasions, and in all those three I do not think they killed more than 1,200 or 1,500 seals, including pups. If any others had effected a landing we should have known it, for the rookeries are constantly watched, and the natives are very keen in this matter. (Harry N. Clark.)

We tried to make a raid on St. George, but the *Corwin* was after us and we kept out of its way. (Peter Duffy.)

During the time I was on St. George Island there never was a raid on the rookeries to my knowledge, and I never heard of any such raid ever having taken place. (Samuel Falconer.)

I have known of one or two schooners operating in Bering Sea as early as 1877 or 1878, and they were on the rookeries occasionally during the past ten years, but they can not damage the seal herd much by raiding the rookeries, because they can not take many, even were they permitted, which they are not by any means. (John Fratis.)

Raids on the rookeries by marauders did not, while I was on the island, amount to anything, and certainly seal life there was not affected to any extent by such incursions. I only knew of one raid upon St. Paul Island while I was there. It was by a Japanese vessel, and they killed about 100 seals, the carcasses of which we found on board when we captured the vessel. (H. A. Glidden.)

We sailed about January from Victoria, British Columbia; sailed along the coast until the latter part of June and went into Bering Sea, and sealed as near to St. George Island as we could. We caught about 300 or 400 seals in the sea. Our intention was to make a raid, but were driven away by a revenue cutter. We left the sea about the latter part of July. (Joseph Grymes.)

Max. Heilbronner, having been duly sworn, deposes and says: I am secretary of the Alaska Commercial Agency, and as such have in my custody all record books of the company, and among them the daily records or "log book" kept by the agents of the company on St. George Island from 1873 to 1889, inclusive, and on St. Paul Island from 1876 to 1889, inclusive. In these books every occurrence was carefully noted from day to day by the agent in charge at the time. They have been examined under my supervision, and show only the following raids on St. George Island during the time covered by them, to wit:

October 23, 1881: The carcasses of 15 dead pups and a cargo hook were found on a rookery. It was supposed that the crew of a schooner seen about the island a few days previous landed in the night.

October 10, 1884: Fifteen seal carcasses were found on Zapadnie rookery. A guard was stationed, and the following night the crew of a schooner made an unsuccessful attempt to land. The boats were fired on by the guard and retreated.

July 20, 1885: A party landed under the cliffs in a secluded place and killed about 500 adult female seals and took the skins away with them. They killed about 500 pups at the same time, leaving them unskinned.

July 22, 1885: A party landed at Starry Arteel rookery and killed and skinned 120 seals, the skins of which they left in their flight, when pursued by the guard. They killed also about 200 pups, which were left unskinned.

November 17, 1888: A crew landed and killed some seals at Zapadnie; how many is not known, but at this season of the year the number must have been small, because the seals have nearly all migrated.

September 30, 1889: Eighteen dead pups and four clubs were found on a beach near a rookery. It is not known whether any others were killed.

An examination of St. Paul record does not show any destructive raids upon the island. It is a fact, however, that in July, 1875, prior to the beginning of the record, the crew of the schooner *San Diego* landed on Otter Island, a small islet 6 miles from St. Paul, and killed and skinned 1,660 seals. She was captured before leaving the island, and both the skins and vessel were condemned to forfeiture by the United States court.

The reports of the superintendent for the lessees show that it was the custom of the company's agent on the islands to frequently patrol the rookeries whenever the weather was such that a landing could be effected on them, and to keep watchmen at points distant from the villages, whose special duty it was to report every unusual or suspicious occurrence. For this purpose the northeast point of St. Paul Island was connected with the village by telephone in 1880, a distance of 12 miles, and the natives instructed in the use of the instrument. If any raids upon the islands, other than those herein mentioned, had occurred, I am sure they would have been detected and reported to this office. No such reports are on file. (Max. Heilbronner.)

H. H. McIntyre, having been duly sworn, deposes and says: I was superintendent of the seal fisheries of Alaska from 1871 to 1889, inclusive. The records above referred to were kept under my direction by my assistants on the respective islands. I was in frequent correspondence with these assistants when not personally present and am sure that anything worthy of notice would have been promptly reported to me. I believe that these records contain a true account of all destructive raids upon the islands. If there had been any others I should have heard of them. Every unusual occurrence at any point about the islands was noted by the keen-eyed natives and at once reported to the company's office, the matter was investigated, and a record of it entered in the daily journal. I am confident that the only marauding expedition that ever succeeded in killing more than a few dozen seals each were those of 1875, upon Otter Island, and of 1885 upon St. George Island, the details of which were set forth by Mr. Heilbronner in the foregoing affidavit. If there were others of which no records appear the number of seals killed was comparatively very small and had no appreciable effect upon seal life. (H. H. McIntyre.)

Sometimes they try to land on the rookeries, but we drive them off with guns, and they never get many seals that way. (Nicoli Krukoff.)

I do not mean to say that the seals were injured because a few were killed on the rookeries, when men from schooners landed on the islands in the night or when the fog was very thick, for the numbers killed in that way never amounted to much, as it is not often the raiders can land on a rookery and escape with their plunder. (Aggie Kushen.)

When on a raid we would watch for a favorable opportunity to make a landing, and then kill male and female fur seals indiscriminately. Probably for every 500 marketable skins secured, double that number of pups were destroyed. (L. M. Lenard.)

While I was on the island there were not more than three or four raids on the rookeries to my knowledge, and I think that the destruction to seal life by raiding rookeries is a small part of 1 per cent as compared with the numbers taken by killing in the water. (A. P. Loud.)

It is often difficult to entirely prevent poaching on the islands, although in my judgment it has not been of sufficient importance on the Commander Islands to have any perceptible influence in the diminution of the herd. (John Malowansky.)

I remember seeing an occasional sealing schooner in Bering Sea as long ago as 1878, but it was in 1884 they came in large numbers. At first it was supposed they intended to raid the rookeries, and we armed a number of men and kept guard every night, and we drove off any boats we found coming to a rookery. Sometimes in a dense fog or very

dark night they landed and killed a few hundred seals, but the numbers taken in this manner are too small to be considered. (A. Melovedoff.)

One cause of destruction is raiding, which has been done upon the shores of the islands. A half dozen such raids are known to me personally; but while it is not possible for me to state with certainty the skins actually secured by such raids, I believe that, although such raiding is detrimental, its injurious effect as compared with the disastrous results of pelagic sealing is insignificant. (T. F. Morgan.)

There was only, as I recollect, four raids on the islands while I was there; but little or no damage was done, and seal life was not perceptibly affected by such marauding. (J. H. Moulton.)

From my personal knowledge of the number of seals killed upon the Pribilof Islands by raids upon the rookeries during my residence there, and from information gained from other sources, I conclude that the number of fur seals killed is infinitely small compared with the number killed in pelagic sealing—so small as to have no appreciable effect upon seal life upon the islands. (S. R. Nettleton.)

I am told that the diminution of seal life has been attributed to raids by poachers upon the seal islands. Very few of these have occurred, and the number of skins obtained by the poachers has been comparatively infinitesimally small. I think the whole number obtained by them in this way does not exceed 3,000 or 4,000 skins. We were accustomed always to maintain a patrol and guard upon the rookeries whenever the weather was such that poachers could land upon them, and upon the least suspicious circumstances measures were taken to forestall any attempts to steal the seals. The sea is usually rough in the fall, when poachers try to get in their work; the shores are, at most places, inaccessible from boats, and the natives are vigilant and active. If marine hunting is stopped, they can be safely trusted to defend the property upon which their very existence is dependent, as they have done repeatedly, against any single schooner's crew. (Gustave Niebaum.)

There were occasional raids made upon the islands (Commander) by poachers during our twenty years' lease, but they were generally unsuccessful in killing any considerable number of seals, and their raids had no appreciable effect upon the rookeries. (Gustave Niebaum.)

During those years the lawless occupation of seal poaching was in its infancy. Marauding vessels from time to time were seen in these waters, but the islands were so well guarded that during my term of office there never was a successful raid or landing upon either of the islands of St. Paul or St. George. The only landing upon any island of the group was made in June, 1881, upon the unoccupied island of Otter (not included in the lease), as described in my special report to the Secretary of the Treasury, dated July 4, 1881. On that occasion a predatory schooner succeeded in landing a boat's crew, who killed 40 or 50 seals, when they were driven off by a boat sent by me for that purpose from St. Paul, about 6 miles distant. (H. G. Otis.)

Until 1884 sealing schooners were seen but very seldom near the islands or in Bering Sea, and the few seals taken by the hunters who raided the rookeries occasionally are too paltry to be seriously considered, because the raids were so few, and the facilities for taking many seals off so utterly insignificant. (J. C. Redpath.)

There was but one successful raid on the rookeries while I was upon the island and but 125 seals were killed. I do not consider that raids on the rookeries have anything to do with the decrease of the number of seals. (T. F. Ryan.)

While I was on the islands there were no raids on the rookeries, and seal life was never depleted at that time by such means. (B. F. Scribner.)

There was but one raid on the rookeries while I was there, and that took place on Otter Island, about 60 skins being taken. After that raid the Government kept a man on Otter Island during the entire summer to protect it from marauders. Raids on the islands never affected seal life to any extent. (W. B. Taylor.)

I do not remember the precise date of the first successful raid upon the rookeries by sealing schooners, but I do know that for the past ten years there have been many such raids attempted and a few of them successfully carried out, and that as the number of schooners increased around the islands, the attempted raids increased in proportion, and it has been deemed necessary to keep armed guards near the rookeries to repel such attacks. Although a few of the raids were successful and a few hundred seals killed and carried off from time to time during the past ten years, the aggregate of all the seals thus destroyed is too small to be mentioned when considering the cause of the sudden decline of seal life on the Pribilof Islands. (Daniel Webster.)

DESTRUCTION OF FEMALE SEALS.

Examination of pelagic catch of 1892.

On May 7 of this year I examined 355 salted fur-seal skins, ex steamer *Umatilla* from Victoria, and found the same to be fresh skins taken off the animal within three months. They were killed in the North Pacific. On examination I found they were the skins known as the Northwest Coast seals, and belong to the herd which have their rookery on the Pribilof Islands. The lot contained 310 skins of the fur-seal cow (matured). From the shape of the skins most all of these cows must have been heavy with pup, and same cut out of them when captured. Eighteen skins of the fur-seal male (matured). Twenty-seven skins of the fur-seal gray pup, from 6 to 9 months old; sex doubtful.

On June 2 I examined 78 salted fur-seal skins, ex steamer *Walla Walla* from Victoria, and found the same to be fresh skins taken off the animal within three months. They were killed in the North Pacific. On examination I found they were the skins known as the Northwest Coast seals, and belong to the herd which have their rookery on the Pribilof Islands. The lot contained 66 skins of the fur-seal cow (matured). From the shape of the skin most all of these cows must have been heavy with pup, and the same cut out of them when captured. Five skins of the fur-seal male (matured). Seven skins of the fur-seal gray pup, from 6 to 9 months old; sex doubtful.

On June 7 I examined 268 salted fur-seal skins, ex steamer *Umatilla* from Victoria, and found the same to be fresh skins taken off the animal within three months. They were killed in the North Pacific. On examination I found they were skins known as the Northwest coast seals and belong to the herd which have their rookery on the Pribilof Islands. The lot contained 212 skins of the fur-seal cow (matured). From the shape of the skin most all of these cows must have been

heavy with pup, and same cut out of them when captured. Eleven skins of the fur-seal male (matured). Forty skins of the fur-seal gray pup, from 6 to 9 months old; sex doubtful.

On the same date I also examined 124 salted fur-seal skins, ex steamer *Umatilla* from Victoria, and found the same to be fresh skins taken off the animal within three months. They were killed in the North Pacific. On examination I found that they were the skins known as the Northwest coast seals and belong to the herd which have their rookery on the Pribilof Islands. The lot contained 93 skins of the fur-seal cow (matured). From the shape of the skin most all of these cows must have been heavy with young, and the same cut out of them when captured. Fifteen skins of the fur-seal male (matured). Sixteen skins of the fur-seal gray pup, from 6 to 9 months old; sex doubtful.

I notice on examining seals caught this spring that there is a lack of the larger size of productive animals, and the lots mostly contain the skins of the medium-sized seals, running from 2 to 3 years of age. (Charles J. Behlow.)

On the 29th instant I examined 2,170 salted fur-seal skins, ex schooner *Emma and Louise* from the North Pacific Ocean, and found same to be fresh skins taken off the animal within four months. They were killed in the North Pacific. On examination I find they were the skins known as the Northwest coast skins, and belong to the herd which have their rookery on the Pribilof Islands. The lot contained 4 skins of the fur-seal large bulls (breeding bulls); 123 skins of the fur-seal male (mostly matured); 98 skins of the fur-seal gray pup, less than 1 year old, sex doubtful; 1,112 skins of the fur-seal cow (mostly matured). From the shape of the skin most all these cows must have been heavy with pup, and same cut out of them when captured. (Charles J. Behlow.)

As a result of the work I have performed for so many years I am able to distinguish without difficulty the skin of a female seal from that of a male seal. There are generally several ways in which I can tell them apart. One of the surest ways consists in seeing whether any teats can be found. On a female skin above the age of 2 years teats can practically always be discovered; when the animal is over 3 years old even a person who is not an expert at handling skins can discover two prominent ones on each side of almost every skin. This because after the age of 3, and often even after 2, almost all females have been in pup. There are also teats on a male skin, but they are only very slightly developed. When the fur is matted, as it is in salted fur-seal skins, the male teats can not be found, but the female teats of skins more than 2 years old can be found under all circumstances.

I have been able to test all my observations as to the teats on salted fur-seal skins by following these skins through the various processes which I have described. During these processes the skins become thinner and thinner, and the teats more and more noticeable, and at an early stage in the dressing they must be wholly removed. There are other ways of distinguishing the skins of the two sexes. I will state a few of them.

A female has a narrower head than a male seal. By the word "head" I mean here to include that part of the body from the head down to the middle of the back. I believe all men who have handled the skins of both sexes have noticed this point. Then, again, when the whiskers have not been cut off they generally afford a safe means of distinguishing the sexes. Male whiskers are much more brittle and of a darker color than those of the female animal. When the male seal is over 6

years old it begins to have a mane, and for this reason it is after that age called a wig. Finally, it is generally possible for me to tell the skins of the two sexes apart by just taking a look at them or feeling them. I suppose I can do this because I have been at the business so long that I am an expert in it.

The chief classes of seal skins that I have handled are the Alaska, the Northwest coast, and the Copper Island skins. I can always distinguish the skins of these classes. The Northwest Coast skins are most easily told by the very great proportion of females contained in any given lot. Among the Alaska and Copper skins I have hardly ever seen a female skin. (John J. Phelan.)

I was sent to New York from Albany a few days ago by Mr. George H. Treadwell, with instructions to go through a certain lot of seal skins which, I understand, he had recently bought in Victoria, and to find out how many of these skins were taken from female animals. I have spent four days in doing this, working about seven hours a day.

There were several men who unpacked the skins and laid them before me, so that all of my time was spent in examining the individual skins. The lot contained 3,550 skins. I found that, with the possible exception of two dried ones, they were taken from the animal this year; they were a part of what is known as the spring catch. I know this to be the case by the fresh appearance of the blubber and of the skin as a whole. This affords a sure way of telling whether the skin has lain in salt all winter or whether it has been recently salted. I personally inspected each one of these skins by itself and kept an accurate record of the result. I divided the skins according to the three following classes: Males, females, and pups. In the class of pups I placed only the skins of animals less than 2 years of age, but without reference to sex.

I found in the lot 395 males, 2,167 females, and 988 pups. Leaving out of account the pups, the percentage of females was therefore about 82. The great majority of what I classed as male skins were taken from animals less than 3 years of age. There was not a single wig in the lot. On the other hand, nearly all the female skins were those of full-grown animals. On every skin which I classed among the females I found teats, with bare spots about them on the fur side. Such bare spots make it absolutely certain that these teats were those of female skins.

With regard to the pup skins, I will say that I did not undertake to determine whether they were males or females, because they had a thick coat of blubber which, in the case of an animal less than 2 years old, makes it very hard to tell the sex.

All of the skins that I examined were either shot or speared. I did not keep a close count, but I am of the opinion that about 75 per cent of them were shot.

The result of the examination is about what I expected it would be. The figures only confirm what I have always noticed in a general way, that nearly nine-tenths of the skins in any shipment of Northwest coast skins are those of female animals. (John J. Phelan.)

Examination of catch of vessels seized.

About seven years since I was on the revenue cutter *Corwin* when she seized the sealing schooner *San Diego* in Bering Sea. On the schooner's deck were found the bodies of some 20 seals that had recently been killed. An examination of the bodies disclosed that all of them,

with but a single exception, were females, and had their young inside or were giving suck to their young. Out of some 500 or 600 skins on board I only found some 5 of the number that were taken from males. I have also been present at numerous other seizures of sealing vessels, some 18 in number, and among the several thousand skins seized I found on examination that they were almost invariably those of females. There certainly was not a larger proportion of males than 5 to 100 skins. This great slaughter of mother seals certainly means a speedy destruction of seal life. (James H. Douglass.)

While in Unalaska in September, 1891, awaiting transportation to San Francisco, I had an opportunity to examine personally the catch of the steam sloop *Challenge*, which had been warned out of the sea, and was undergoing repairs at the harbor named. The catch amounted to 172 skins, which were all taken in Bering Sea at various distances from the seal islands, and of this number only three were those of male seals, one of those being an old bull, and the other two being younger males. (A. W. Lavender.)

In July, 1887, I captured the poaching schooner *Angel Dolly* while she was hovering about the islands. I examined the seal skins she had on board, and about 80 per cent were skins of females. In 1888 or 1889 I examined something like 5,000 skins at Unalaska, which had been taken from schooners engaged in pelagic sealing in Bering Sea, and at least 80 or 85 per cent were skins of females. (A. P. Loud.)

I have personally inspected skins taken upon the three schooners *Onward*, *Caroline*, and *Thornton*, which skins, taken in Bering Sea, were landed in Unalaska and were then personally inspected by me in the month of May, 1887. The total number of skins so examined was 2,000, and of that number at least 80 per cent were the skins of females. I have also examined the skins taken by the United States revenue cutter *Rush* from one of the North Pacific islands, where they had been deposited by what is known as a poaching schooner and taken to Unalaska, which numbered about 400 skins, and of that 400 skins at least 80 per cent were the skins of female seals. I have also examined the skins seized from the *James Hamilton Lewis* in the year 1891, by the Russian gunboat *Aleut*, numbering 416, of which at least 90 per cent were the skins of female seals. From my long observation of seals and seal skins I am able to tell the difference between the skin of a male and the skin of a female seal. (T. F. Morgan.)

I examined over 12,000 skins from sealing vessels seized in 1887 and 1889, and of these at least two-thirds or three-fourths were the skins of females. (L. G. Shepard.)

REASON PREGNANT FEMALES ARE TAKEN.

I think cow seals are tamer than young male seals. (Martin Benson.)

A cow seal that is heavy with pup is sluggish and sleeps more soundly than the males, and for that reason they are more readily approached. (Henry Brown.)

They are very tame after giving birth to their young and are easily approached by the hunters. When the females leave the islands to feed they go very fast to the fishing banks, and after they get their food they will go to sleep on the waters. That is the hunter's great chance. I think we secured more in proportion to the number killed than we did *in the North* Pacific. (James L. Carthcut.)

They sleep more and are less active and more easily captured. (Simeon Chin-koo-tin.)

I think the female seal is less active and more easily approached. (Peter Church.)

I have noticed that the females when at sea are less wild and distrustful than the bachelor seals, and dive less quickly in the presence of the hunter. After feeding plentifully, or when resting after heavy weather, they appear to fall asleep upon the surface of the water. It is then they become an easy target for the hunters. (James H. Douglass.)

I think the females sleep more on the water, and are less active and more easily taken than the males. (E. Hofstad.)

When the females are with pup they sleep more, are less active, and more easily approached than the male seals. (P. Kahiktday.)

Think cows are much more plentiful on the coast, sleep more, and are more easily captured than the male seals. (John Kowineet.)

Think cows are less active and require more sleep than the young male seals. (George Lacheek.)

I am informed and believe that the reason of there being such a large proportion of females among the coast skins is because the male, which is powerful and strong, usually swims more readily and at a longer distance from the coast, and are so scattered and active and hard to catch that it does not pay to hunt them. The female heavy with young easily tires and sleeps on the water, and is easily shot while in that condition. (George Liebes.)

Mother seals heavy with young are much easier taken, for they are usually asleep on the water. (William H. Long.)

Q. Why is it, in your opinion, that more female than male seals are killed by the poachers?—A. Because, first, in the passage of the seals to the islands in the early season the females travel in groups and the males scatter; secondly, after arriving at the islands the males remain on or about the hauling grounds, while the females, having their pups to nurse, go out into the sea to obtain food.

Q. How do you tell the skin of a female from that of a male?—A. By the nipples and general appearance. (Anton Melovedoff.)

As I understand the fact to be, most of the seals killed in the open sea are females. My reasons for this conclusion are that, from my knowledge of the seal, I know that the female when heavy with young, as they are during the early part of the season when on their way to the rookeries, where they are delivered during the months of June and July, are much heavier in the water and much less able to escape, because they are capable of remaining under water to escape for a very much less period of time than when they are not heavy with young, or than the male seal would be. (T. F. Morgan.)

It is harder to take an old seal than a young one, the older ones being more on the alert and are not less active when pregnant. (W. Roberts.)

Of the seals killed, from 60 to 70 per cent are females, which, during their northerly migration, are heavy with young, slow of movement, and require an extra amount of rest and sleep, thus largely increasing their liability to successful attack. (Z. L. Tanner.)

I have been told that it is easier to catch the female seal at sea than it is to catch the male seal, but I have no personal knowledge of that

point. I suppose, however, that there must be some foundation for the statement by reason of the fact that so small a proportion of male adult seals are included in what is called the northwest catch. (Emil Teichmann.)

The cows are less active, sleep more, and are more easily captured. (M. Thlkahdaynahkee.)

Cow seals sleep sounder on the water, are less active, and are easily captured. (James Unatajim.)

Cows are more easily captured because they have pups. (Rudolph Walton.)

They are less active, sleep more, and are easier captured. (Charlie Wank.)

It is my opinion that female seals are more easily captured and appear to be more tame than the male seal, and, I think, sleep more. (P. S. Weittenhiller.)

The large proportion of females killed in the North Pacific is due to the fact, as I explained before, that males pursue their way to the hauling grounds with dispatch, while the females are more leisurely in their movements and take frequent rests. (T. T. Williams.)

DECREASE OF SEALS.

Percentage lost of seals killed.

From my experience I am satisfied that 33⅓ per cent shot with a shotgun are lost, and when a rifle is used a larger per cent are lost when killed. (Peter Anderson.)

We lost three out of four we killed. (H. Andricius.)

On an average, we saved one out of three that were killed. (Bernhardt Bleidner.)

It is my honest belief that for every fur-seal skin obtained by pelagic sealers at least five other seals' lives are taken. (J. A. Bradley.)

During the trip of 1891 I don't think we got more than one seal out of six that we killed; many were wounded, and others were shot dead and sank before the boat could get to them. (Thomas Brown.)

Native hunters secure about one-third of all fur seals killed at sea, while in my belief white hunters secure even a less number in proportion to those killed. (M. Cohen.)

An average hunter will get one out of four of breaching seals and one out of three of sleepers that he kills, but a common hunter will not get so many. (Peter Collins.)

And that a vast number of the seals killed by them are lost. (Leander Cox.)

It is my experience that very few, if any, seals were lost by the hunters who use the spear, but fully 75 per cent of all those killed by the rifle were lost. (James Dalgarduo.)

From my observation of the methods employed by the open-sea hunters I believe that a very large proportion of those killed by them are lost. I have often heard sealers so express themselves, They have said to me that they get only about one out of five shot or killed; others made

the loss still greater. I think the latter statement more nearly correct. (M. C. Erskine.)

Of seals killed, about four out of five are saved. (F. F. Feeny.)

An experienced hunter like myself will get two out of three that he kills, but an ordinary hunter would not get more than one out of every three or four that he kills. (Thomas Gibson.)

I lose about 50 per cent when I use the shotgun, and more are lost when rifle is used. I always shoot them in the head when possible, but if not possible, I shoot them in any part of the body that is exposed. (Gonastut.)

About 50 per cent are lost when killed with a shotgun, and a larger per cent when rifle is used. (James Gondowen.)

The hunters would get, on an average, one out of every four they killed. (James Grymes.)

On an average, I think the hunters will save about one out of three that they kill, but they wound many more that escape and die afterwards. (James Harrison.)

Formerly the seals were gentle and the approach of a vessel did not even alarm them, but when firearms came into use it so frightened them that they had to be shot at long range, entailing a loss of not less than three out of every four or five killed. (M. A. Healy.)

My experience convinces me that a large percentage of the seals now killed by shooting with rifles and shotguns are lost. My estimate would be that two out of every three killed are lost. Formerly the killing was done by spearing, and in later years it was learned that shooting them was a swifter method of killing. At the start the hunters were inexperienced and a large proportion were lost. (James Kiernan.)

I use the shotgun for taking seal, and sometimes I lose one or two out of ten that I kill. (James Klonacket.)

I have made it my business to find out what proportion of skins of seals killed are really brought into the market, and from the information which I obtained from the sealers, hunters, and those owning the skins I learned that on an average only about one out of six killed was secured, varying with the expertness of the hunter. (George Liebes.)

The number of seals actually secured to the number killed does not exceed about one in four, or about one is taken for every three destroyed, varying, of course, with the skill and experience of the hunters. (Isaac Liebes.)

From these conversations I should judge they did not secure more than one half of the seals killed; and this, I think, is a large estimate of the number secured. (A. P. Loud.)

I have frequently noticed, in the harbor of Petropaulovsky, that the natives, in killing hair seals, are only able to obtain one animal out of every four or five of those killed, and that they frequently wait about four days for the bodies to be washed ashore. (John Malowansky.)

None I lost when I used spear. About 20 per cent are lost when killed with shotgun. (Nashtau.)

An experienced A No. 1 seal hunter, in shooting sleeping seals with a shotgun, will get a large proportion of what he kills, and will get one

out of four breaching seals that he kills; but an ordinary common hunter like myself will sometimes use ten cartridges and not get one seal. I can safely say that a common hunter will only get one seal out of three. (Niles Nelson.)

The white hunters who used guns in Bering Sea were banging away at the seals sometimes all day long, and they would lose a great many of those that they shot. I do not think that they brought to the schooner one-half of those that they killed, to say nothing of those that they wounded and got away. (Osly.)

But since it has become the practice to hunt seals with guns a good many are killed, wounded, and lost. Green hunters bang away and wound more than they kill, and will shoot six or seven before they get one, and sometimes more. Good hunters will do much better. I used to get most of the seals I killed, but I have killed five dead in succession and lost the whole of them. (William Parker.)

Shotgun is exclusively used by me for taking seals. Lose about 20 per cent of those killed with shotgun. (Abel Ryan.)

The captain, mate, and myself went out several times with the stern boat and we killed 15 the first time we went out. I think we went out that way three or four times, and we usually got one out of four killed. I recollect one day when we were hunting, bad weather set up and we did not get any seals. In good weather we got more seals than we did in bad weather. (Peter Simes.)

And we got one out of five killed. (John A. Swain.)

On my first voyage I think we got two out of every five that we killed. (Adolph W. Thompson.)

When seal were struck with a spear none were lost; lose about 50 per cent when killed with shotgun. (Charlie Tlaksatan.)

I had in my employ men who are old seal hunters and who were formerly engaged in that business, and they have often told me that they lost at least two out of every three they killed. (M. L. Washburn.)

Percentage lost of seals struck.

The skill of the hunter has a great deal to do with the number of seals secured of those killed or wounded, but the most expert does not get more than half he hits, and the average for hunters in general would be about three in ten. (C. A. Abbey.)

We secure one out of about every five that we shoot at or kill. (Charles Adair.)

An experienced hunter would get one out of every three that he shot or killed, and a green hunter would get about one out of every seven or eight that he shot or killed. (Charles Adair.)

It has been my custom in the last few years to examine the logs of sealing vessels and to converse with officers and hunters of such vessels in order to obtain what information I could as to the methods employed by hunters and the loss of seals occasioned in such pursuit. From the logs I learned that in many instances 100 rounds of ammunition had been fired to each skin secured, and often more; and on an average I found that not over five seals to the hundred shots had been obtained. The logs further showed that a large number had been wounded and lost. I also ascertained from the logs and from conversation with

masters of sailing schooners that not one seal out of ten killed or wounded had been caught. These inquiries I pursued at San Francisco until quite recently. The chief killing by poachers was done between the passes of Aleutian Archipelago and the Pribilof Islands. (George R. Adams.)

Have always used a shotgun and rifle in taking seal since a young man. I rarely lose any seal I shoot, as I never shoot at them unless they are very close to the boat. (Adam Ayonkee.)

Have always used a shotgun for taking seal, and lose about 40 per cent of what I shoot. (Maurice Bates.)

No seal were lost when struck with spear. About 40 per cent of seal shot with shotgun are lost, and more when the rifle is used. (Wilton C. Bennett.)

I use the shotgun for taking seal. I lose about 25 per cent of the seals shot. (Edward Benson.)

The spear and shotgun have been used by me. But few seals are lost that are struck by spear. About 66 per cent are lost when shot with shotgun, and a larger proportion are lost when rifle is used. (Martin Benson.)

On the *Pioneer* we had a couple of good hunters, who would get almost all they shot at, while some of our hunters would lose a good many that they would kill and wound. A green hunter will not get more than one out of five, and I have known one hunter on our vessel who shot eight shots and got only four seals. Indian hunters that use spears seldom lose any that are struck, and there is no wounded to go away and die. (Neils Bonde.)

This year the seals are wilder than the year before; I think it was because they were hunted so much. We did not capture as many in proportion to the number shot as we did the year previous, and did not save more than one out of six that we shot. (Thomas Brown.)

We got on an average three or five out of every twelve killed and wounded. It depends a great deal upon the weather. There were lots of seals in the water at that time. (Thomas Brown.)

The average hunter would get one out of every three that he shot; a poor hunter not nearly as many. There are 21 buckshot to a shell. * * * When they are in school sleeping we get a good many. We did not get as many as we shot at in Bering Sea as we did on the coast. If we got one out of every three we were doing pretty well. (Charles Chalall.)

I used a shotgun almost exclusively last season, and lost about one-third of all furs shot. (Julius Christiansen.)

I think about 50 per cent of the seals shot with shotgun are lost, and greater proportion are lost when shot with a rifle. (Peter Church.)

I always use the shotgun for taking seal. I think about 25 per cent are lost. (William Clark.)

Over 50 per cent are lost when shot with shotgun. (John C. Clement.)

My observation of the seal hunting by white hunters in 1888 is that they do not secure more than two or three out of every hundred shot. The number of shots fired by a hunter in an ordinary day's sealing is something enormous, and the waste of seal life in the water is

dreadful to contemplate. * * * The proportion of loss of seals shot by white hunters in the Otto was quite as great in 1891 as by the hunters in the year before stated. I have never seen any black pups in the North Pacific Ocean. (Louis Culler.)

When it was rough weather we got one out of six that we killed or wounded, and in smooth weather we could get on an average one out of three and sometimes three out of five. (John Dohrn.)

On an average, all the hunters got one out of three or four seals that they killed or wounded. There were plenty of seals in the water at that time. (Richard Dolan.)

We got one out of every five or six that we killed or wounded. We wounded a great many that we did not get. (George Fairchild.)

When I was a young man the Indians used the spear for taking seals; now they have learned from the white men to use the shotgun. About three out of ten are lost that are shot. (Frank.)

The hunters used rifles and shotguns. They got about one out of every six they shot at or killed, and sometimes they got none. The great majority of them were females. We used rifles, we had experienced hunters on board, and we got one out of every three killed or wounded. (William Frazer.)

Q. What percentage of seals are taken compared to those you destroy in doing so? In other words, how many do you actually get of those you shoot?—A. About 30 per cent.

Q. Is it not a fact, when you first started in the business and was inexperienced in hunting, that you, like all other beginners, destroyed a much larger proportion than you now do?—A. Yes; a little more in proportion. (Edward W. Funcke.)

Indians lose a less number of the seals shot at and wounded or killed than white hunters. When they use spears they get nearly all they wound. When they use shotguns they do not get more than one out of eight killed or wounded. In conversation with boat steerers and boat pullers I have frequently heard them state that hunters would sometimes fire from 75 to 100 shots without bringing in a single seal. The hunters would claim they secured nearly all they fired at or killed, but it is known that this is not true. It is impossible to say what proportion of the seals fired at are killed or wounded, but taking the run of hunters, good and poor, I should say that the best get about 50 per cent of those shot at, while the poorest do not get more than one out of fifteen fired at. (E. M. Greenleaf.)

The native hunters used spears exclusively in hunting the seals, and secured fully two-thirds of all struck. I am of the opinion that with firearms not more than one-third of the animals shot are actually secured. (A. J. Guild.)

Have always used a shotgun for taking seal, and lose about 25 per cent of the seals I shoot. (Henry Haldane.)

I use the shotgun exclusively for taking seal. About 65 per cent of the seal hit are lost. (Martin Hannon.)

Q. According to your experience, what percentage of animals that are shot are actually taken by the boats?—A. That depends a good deal on the man that shoots them. Some fellows will miss four out of five and another may miss three out of five and cripple them. I think on a general average we will get about three out of five. (H. Harmsen.)

Q. What percentage of seals are taken compared to those you destroy in doing so; in other words, how many do you actually get out of those you shoot?—A. We get about 75 per cent of them.

Q. Is it not a fact that when you first started in the business and was inexperienced in hunting, that you, like many others, destroyed a much larger proportion than you now do?—A. Yes, sir; it is. (Andrew J. Hoffman.)

The shotgun was exclusively used by our hunters. I can form no idea as to the amount of seals lost. Some hunters lost more and some less. It ranges all the way from 10 to 75 per cent, according to stories told by hunters. (O. Holm.)

We used shotguns, and secured about two seals out of five that we shot. (Alfred Irving.)

The Indian hunters with spears would not wound or lose but very few seals that they struck, but the ordinary white hunter will, on an average, lose over half that he kills and wounds. (James Jamieson.)

About 40 per cent shot with shotgun are lost. When the rifle is used a larger per cent is lost. (J. Johnson.)

Have always used shotgun and rifle for taking seal. I never lose any seal when I shoot them, because I always shoot them close to. (Johnnie Johntin.)

The spear and arrow were used to take seal when I was a boy, but now I use the shotgun and rifle. At least 50 per cent are lost when shot with shotgun. When rifle is used a larger portion of seals are lost. (P. Kahiktday.)

I always use the shotgun for killing seal. I lose about four out of ten that I shoot. (King Kashwa.)

I always use the shotgun for taking seal. Sometimes I lose two and three out of ten that I shoot. (Jim Kasooh.)

Fully one-half the seal shot with shotguns are lost, and a much larger proportion when the rifle is used. None were lost when struck with a spear. (Mike Kethusduck.)

On an average we got one or two out of every six or seven that we wounded or killed. (James Kennedy.)

Constant shooting has frightened them and made them wild, so that they have to be shot at great distances unless found asleep. Much depends for successful hunting upon the weather, as it is difficult to get accurate aim when both the hunter's boat and the seal are in motion. A poor hunter does not secure more than one out of every five shot or aimed at. Good hunters do better. (James Kiernan.)

The first sighted was August 4, longitude 136° 32′ west, latitude 52° 46′ north. During the days following August 4 canoes were lowered, but their search for seals was fruitless. On August 14, before entering Bering Sea, a seal was speared by the Indians off Marmont Island, which was bearing NW. ¼ W. 35 miles. We entered the sea at 6.30 p. m. on the 22d day of August and at 9 o'clock the following morning we got our first seal in Bering Sea. It was shot by one of the white men in a boat. We were at this time about 25 miles west by north of Northwest Cape on Unimak Pass. On the same day four other seals were shot, and three not recovered. Two sank and the other escaped badly wounded. The following day the captain shot

two, losing one, and the other boat brought one seal on board. On the 25th of August we were 125 miles southeast of St. George Island. The Indian hunters were out all day and brought in three seals, the white hunters getting none. The captain informed me that day that the previous year he had taken in this locality 148 seals in one day, and that one of his hunters got 38 and lost 40, which he shot. The next day the two boats and canoes were out, and the captain brought back one, but had shot and lost six others, one of which sank. The other boat reported that they had shot seven, but all sank before they could get them, the water being so colored with blood that it was impossible to see the bodies sufficiently to recover them with the gaff. The two Indians brought back ten seals, all speared. Out of the number taken on board four were full of milk. On the 27th the Indians brought in two seals and the captain one, which were all they had seen. On the 29th seventeen seals were taken; the captain got three, having lost two, killed or wounded. The other boat brought in three, having lost two, and the cook shot one from the schooner's deck. Out of these seven were females, which covered the decks with milk while they were being skinned. I am convinced that at the very least white hunters lose 50 per cent of the seals they hit, and probably the majority of those wounded will ultimately die. (Francis R. King-Hall.)

When a seal is struck with a spear we never lose him. About 50 per cent are lost when shot with a shotgun. (Robert Kooko.)

About 60 per cent of the seals are lost when shot with a shotgun. When rifles are used a much larger proportion is lost. (James Lacheek.)

Of all the fur seals struck in the entire season by both implements more than two-thirds were actually secured, the greater proportion of losses resulting from the use of the shotgun. (James E. Lennan.)

The average hunter will fire ten times to get one seal. I think on an average he gets one seal out of every three killed. (William H. Long.)

Q. What percentage of seals are taken compared to those you destroy in doing so; in other words, how many do you actually get out of those you shoot?—A. I should say we get about 80 per cent of those we shoot.

Q. Is it not a fact that when you first started in the business and was inexperienced in hunting, you, like all other beginners, destroyed a much larger proportion than you now do?—A. There is no doubt about that. (Charles Lutjens.)

The shotgun was used exclusively. Over 60 per cent of the seals shot were lost. (George McAlpine.)

I think I lose about 66 per cent of the seals shot with shotguns. (J. D. McDonald.)

Taking the general average, we would not get more than two seals out of every ten that the hunters shot at. Out of every sixty-five seals that were brought aboard the schooner I got one, so I tried to spear as many as I could after they were shot. We caught more seals in Bering Sea than we did going along the coast, as we found more of them. * * * All the seals that we shot at in rough weather were lost. In fine weather they sleep on top of the water, and we do not lose so many of them. (William McIsaac.)

No seals are lost that are struck with spears. With a shotgun about 50 per cent are lost. (James McKeen.)

We got about one out of every five that we killed or wounded. There was any amount of them that we shot and did not get at all. It seemed as if a good many got away. * * * We had some white and Indian hunters. I do not think that we lost as many that year in proportion to those that we killed and wounded. They were better hunters. (William McLaughlin.)

Q. According to your experience, what percentage of animals that are shot at are actually taken by the boats?—A. That is according to the ammunition that we use. About one-third are taken. (Daniel McLean.)

We had Indian hunters who used shotguns. The Indian hunters are more expert than the white hunters and they do not lose so many seals as they kill. I think they would get one out of every two or three killed or wounded. (Thomas Madden.)

About 50 per cent of the seals shot with shotgun are lost. (Edward Maitland.)

There were six boats on the vessel. Some of the boats would come in without a seal after being out all day long shooting, but they would wound a great many. On an average, taking all the boats together, they got one out of every five or six that they killed or shot at. We wounded a great many that we could not get. (Patrick Maroney.)

About 50 per cent are lost that are shot with the shotgun. (Charles Martin.)

I do not think they would get more than one seal out of every six or seven they shot, and sometimes only one out of ten. (Henry Mason.)

Our hunter was a good one. His name was Joe Williams. I think he got one out of every three, on an average. He used a rifle a good deal, and was a fine shot. Some of the hunters in the other boats would shoot at the seal and not get any at all, and come in at night without any, or maybe one or two. There was one hunter from Nova Scotia that did not kill any, scarcely. (William Mason.)

I think about 33 per cent of the seals shot with a shotgun are lost. (E. Miner.)

About 20 per cent of the seals I shoot with shotgun are lost. (Amos Mill.)

Q. What percentage of seals are taken, compared to those you destroy in doing so; in other words, how many do you actually get out of those you shoot?—A. About 75 per cent. We lose about 25 per cent.

Q. Is it not a fact that when you first started in the business and were inexperienced in hunting, that you, like all other beginners, destroyed a much larger proportion than you do now?—A. Certainly; there is no doubt about that. (Frank Moreau.)

From my knowledge of the aquatic habits of the seal, and the difficulty of accurate shooting when the object is in the water, I am of the opinion that a large number of seals are killed by vessels engaged in the business of taking seals in the open seas which are not caught. I am unable to form an estimate of the number of seals shot or speared from vessels which are lost, but in the last two or three years of my residence at St. George Island, in taking 15,000 seals, I found approximately three pounds of lead, in the form of slugs, bullets, and buckshot, which I personally took from the bodies of male seals, some of

which were so badly wounded that they would have died. I have personally examined the log of the schooner *Angel Dollie*, in which it was stated that the hunters from that vessel got about one seal out of every ten shot at; also that on one occasion they fired 250 rounds, and got 20 seals; on another occasion 100 cartridges, and got 6 seals, and which log also stated that the captain personally shot and killed 7 seals, of which he got only one. (T. F. Morgan.)

They lost very few of the seals they speared. They secured about all of the seals they speared. (John Morris.)

When in Bering Sea, I had an opportunity to observe the difference in the number of seals lost by killing them with shotguns and by taking them with spears. The hunters that used shotguns lost more than one-half they shot, while the hunters that used spears seldom ever lost one that they hit. (Moses.)

It is generally conceded that the Indian hunters in the use of the spear seldom lose one they kill or wound. (Morris Moss.)

When I was a boy I used a shotgun for taking seal, bought from the Hudson Bay Company at Fort Simpson, and have always used a shotgun for sealing. I think about two out of ten seal shot are lost. (Smith Natch.)

Sometimes I lose two and sometimes three seal out of ten I shoot. (Dan Nathlan.)

It depends a great deal upon the weather as to the amount of seals obtained by the hunters. After a heavy blow you see the seals lying on top of the water asleep, and you can get very close to them, and on an average you would get two or three out of every five or six you kill or wound, while in rough weather you would not get one out of five or six killed or wounded. (John O'Brien.)

Not being hunters of experience, our men lost about two-thirds of all the seal shot. Good hunters would not lose to exceed 25 per cent. (Nelson T. Oliver.)

We used shotguns, using buckshot, and I have known twenty shots to be fired at a seal before we got her. When we shot at "sleepers" we got a good many more than when we shot at "bachelors" or "rollers," and we secured on an average about one out of every three killed and wounded. The percentage of loss of those killed and wounded is fully as great as I have stated. (John Olsen.)

When the rifle is used less than one seal for five shots is secured; many shots miss, but of those seals hit about one-half are secured. (W. Roberts.)

It is very hard to estimate the number lost of those shot, but I should judge an expert hunter would lose certainly from 40 to 60 per cent, and a hunter not particularly expert would lose from 80 to 85 per cent. (L. G. Shepard.)

In some instances we ran upon schools of seal and shot five or six, all of which would be lost; in other instances we would secure about one-half of those wounded. One-half of all seals shot on the coast are lost. (William Short.)

About 25 per cent are lost when shot with a shotgun, and more are lost when shot with rifle. Shotgun and rifle are used by me for taking seal. (Jack Shucky.)

When I used a spear none were lost that were struck. When shotgun is used nearly 50 per cent are lost; when rifle is used a still larger percentage is lost. (Martin Singay.)

No seal were lost when struck with spear or arrow. Fully 50 per cent of seal shot with shotgun are lost, and a much larger per cent are lost when shot with a rifle. (Jack Sitka.)

Always use a Hudson Bay gun to take seal with. A Hudson Bay gun is a single-barreled shotgun. Sometimes I lose one and sometimes two out of ten that are shot. (Thomas Skowl.)

I think about one-third of the seal shot with shotgun are lost. (Fred Smith.)

Very few are lost when struck with a spear. About 66 per cent are lost when shotgun is used. (William H. Smith.)

An ordinary hunter will not get more than one out of four that he shoots at. (Cyrus Stephens.)

About 25 per cent of seals shot are lost. (Joshua Stickland.)

Q. What percentage of seals are taken compared to those you destroy in doing so; in other words, how many do you actually get out of those you shoot?—A. I guess we get hardly two-thirds of what we shoot.

Q. Is it not a fact that when you first started in the business and was inexperienced in hunting, that you, like all other beginners, destroyed a much larger proportion than you do now?—A. It is.

I have always understood that 33 per cent of seals shot with shotguns are lost. (W. Thomas.)

The hunters use shotguns and rifles exclusively for taking seal. I think that from what I have been able to learn about half the seal shot are lost, the hunters being unable to secure them before they sink. (John C. Tolman.)

About 60 per cent of the seal shot with shotgun are lost. A much larger per cent is lost when rifle is used. (Peter Trearsheit.)

I get most all the seals that I hit with the spear. I lose one-half of those I shoot with a gun. (John Tysum.)

When the spear was used all seal speared were secured. About 50 per cent of the seals are lost when shot with shotgun. Whenever I have used a rifle for shooting seal a much larger proportion of those killed have been lost on account of shooting them at a longer distance from the boat. (James Unatajim.)

I think I generally lose about 75 per cent of the seals shot with shotgun. (George Usher.)

I have learned from personal observation and from conversations with parties that they lose in killed and wounded at least two out of every three obtained. Other sealers have told me that their loss is much greater. (Charles T. Wagner.)

About 50 per cent are lost when shot with shotgun. When rifle is used a much larger per cent is lost. (Rudolph Walton.)

I have often conversed with the hunters relative to the percentage of the loss of seals to those taken, and some tell me they get one out of five or six. (Elkan Wasserman.)

My hunters use shotgun exclusively. They carry a rifle with them in the boat, but have not used one this season to my knowledge. I think, as near as I can estimate, about 33⅓ per cent of the seals shot are lost. (P. S. Weittenhiller.)

From my knowledge and experience in the business it is my conviction that within the last few years, since the sealers have become so numerous in the Pacific and Bering Sea, that not more than one out of three are secured. (Michael White.)

I always use the shotgun for taking seal. I think I lose about five out of every ten that I shoot. (Billy Williams.)

That for every three sleeping seals killed or wounded in the water only one is recovered. For every six traveling seals killed or wounded in the water only one is recovered. (Theo. T. Williams.)

Sometimes I lose one and sometimes two out of ten that I shoot with a shotgun. (Fred. Wilson.)

When the spear was used very few seal were lost. About 50 per cent are lost when shot with shotgun. A larger per cent are lost when killed with a rifle. I use the shotgun for taking seal, and lose about two out of ten that I shoot. (Billy Yeltachy.)

Sometimes I lose one and sometimes two out of every ten that I shoot. I always shoot the seal close to the boat, so I don't lose many. (Hastings Yethnow.)

The shotgun is used altogether for taking seal. About 33⅓ per cent of the seal shot are lost. (Alf. Yohansen.)

Always use shotgun for taking seal. I lose but very few seal, as I always shoot them very close to the boat. (Paul Young.)

Have always used the shotgun for taking seal. Think I lose about three out of ten of those I shoot. (Walter Young.)

In hunting with spears I capture nearly all that I hit. (Thomas Zolnoks.)

Wounding.

Those only wounded, whether fatally or otherwise, dive and escape capture. The less severely wounded may, and in many cases doubtless do, recover from their wounds; but, in the nature of things, many others must die of their injuries. There is a wide range of chances between an instantaneously fatal or disabling shot and a slight wound from which the victim may readily recover, with obviously a large proportion of them on the fatal side of the dividing line. (Dr. J. A. Allen.)

A good many of the seals that I have caught in the last three or four years have shot in them and some have been badly wounded. I have seen white hunters shooting seals out in the sea, and they lose a great many more than they get, and we sometimes capture some of those that they have badly wounded. (Bowa-chup.)

Have caught a great many seals that had shot in them. (Peter Brown.)

We often take seals that have been wounded with a rifle or shotgun, and in their bodies there are a large number of shot. (James Clap-*lanhoo.)*

A good many are wounded and escape, only to die afterwards. (Alfred Dardeau.)

When I get seals now a great many have shot in them, a thing I never saw before until about six or seven years ago. (Frank Davis.)

Some that I shoot are wounded and get away, and probably die. I have caught a good many seals that had shot in them. (Ellabush.)

They kill and wound a great many that they do not get. I have speared a great many seals that had shot in them. (Selwish Johnson.)

I know that a great many must be lost by the white hunters, for a great many that I catch have shot in them, and some are badly wounded. (James Lighthouse.)

During the killing season on the Commander Islands we frequently find in the bodies both bullets and shot. (John Malowowansky.)

I have captured a great many seals with the spear and found shot in them. (John Tysum.)

When they were wounded we had to chase them, and then sometimes would not get them. (Patrick Maroney.)

While out seal hunting last year I captured a few seals that the white hunters had wounded and lost, and found a good many shot in their bodies. I have captured a good many seals lately that had buckshot in them. (Charley White.)

At the times when the male seals are on the rookeries the large catches are made. A traveling seal is alert, cautious, quick of hearing, and easily disturbed. A sleeping seal is at the mercy of anyone. The large proportion of traveling seals shot at and lost is due to the timidity of the animal; in fact, all the hunters admit that when there is much shooting going on the seals are very difficult to get. The loss of sleeping seals, which I estimate as two lost for one saved, is due to the fact that unless the bullet or shot kills the animal instantly it will immediately dive, and it is not easy to kill a seal instantly. The head of the seal affords but a small mark. Even in the case of a sleeper, the motion of the water keeps it moving. The boat from which the hunter shoots is also moving, and while there are men who at a distance of 50 or 60 yards can shoot a small object under such circumstances, they are extremely rare. They are famous as experts and they are highly rewarded for their skill. Certainly not one in ten of all the seal hunters can truthfully assert, nor do they attempt to do so when in a confidential humor, that they kill 50 per cent of their seals dead. I was in the company of a number of them in Victoria, in 1889, and heard them talking among themselves of their prowess. Some put forward claims which the others derided. Any estimate in excess of the one I have already given called forth uncomplimentary remarks and charges of boastfulness. The disinclination of these men to state the absolute facts, and they alone know what the facts are, in relation to the number of seals shot and lost, has been intensified lately by the feeling that it is necessary for them to make a good showing to back up the claim that pelagic sealing is not absolutely of the seal herd. (Thomas T. Williams.)

Many of the seals I have speared had shot and bullets in them. This was never seen before until about eight years ago, and now it is a frequent occurrence. (Wispoo.)

A great many that I have caught in the last three or four years have shot in them, and many have been badly wounded. (Thomas Zolnoks.)

Percentage lost—General statements.

We had a row on board because some of the hunters were green hands and the men would not go out in the boats with them. They took the hunters out of our boats and put them into the other boats that made no catch, and then we kicked that they should put the green hunters into our boats, because everything they would shoot would sink on them and be lost. (Charles Adair.)

The destructiveness to seal life by pelagic hunting is very great. The majority of seals killed are pregnant females, so that two lives are often sacrificed in securing one skin. This is true whether firearms or spears are used. In addition to this, the number of skins marketed does not represent the number actually destroyed, for many are killed that are not secured, while others, though fatally wounded, still possess strength enough to escape their pursuers. (A. B. Alexander.)

Of those killed the number saved varies with the skill of the hunters. Last year we lost very few. (Charles Avery.)

A very few are lost when shot with the shotgun, as we shoot them close to the boat. (Johnny Baronovitch.)

In hunting with the spear we don't lose many that we hit. I never hunted with guns. (Peter Brown.)

Experienced hunters lose very few seal that are shot, but beginners lose a great many. (Charles Campbell.)

As to the percentage of seals lost in pelagic sealing where the use of firearms is employed, I am not able to state of my own observation and experience, but from conversation with those engaged in the business I am of the opinion that the number secured is small compared with those lost in attempts to secure them. (W. C. Coulson.)

None were lost when the spear was used. When the shotgun is used sometimes they are lost. A few more are lost when rifle is used. (Charlie Dahtlin.)

Were I engaged at present in sealing I should prefer the spear to the rifle or shotgun, and I believe its use is not near so destructive to seal life. (James Dalgarduo.)

The Indians have always hunted seal with a shotgun, and I am sorry to say that they have killed a great many more than they secured. (William Duncan.)

From the ammunition we furnished them I learned that some of the hunters on an average used from two to three rounds of shot to a seal, while others used from forty to fifty rounds. (George Fogel.)

Have always used the shotgun for killing seal, and but very few are lost. (Chief Frank.)

Have always used spear for taking seal, and but very few are lost. (Chad George.)

A very large number of shots are thrown away. In the case of the *Thistle*, in her voyage of 1891, she brought in but nine skins, while her hunters had fired away 260 pounds of shot. She had poor hunters. (E. M. Greenleaf.)

That in pelagic sealing twice as many seals are lost as are captured. *(W. P. Griffith.)*

Always shoot the seal close to the boat and rarely lose one; but when shot at with the rifle I lose a good many. (Hooniah Dick.)

I have always used spears in hunting seals, and seldom wounded or hit one that I did not get until in 1891, which year, and the only one, I went to Bering Sea, and used the shotgun part of the time. I found in the use of the shotgun that a great many of the seals that were killed or wounded were lost. (Alfred Irving.)

We lose but very few seals that we hit with a spear. (Selwish Johnson.)

When seals were struck with a spear none were lost; a great many are lost when the shotgun is used. (C. Klananeck.)

I have often heard them say that they only get two or three out of a school, and when they kill them, if they do not get them right away, they will sink and be lost. Further, that they lose a good many that they kill. (James Lafkin.)

Q. Do you generally shoot seals with a rifle or shotgun?—A. A shotgun. Ninety per cent are killed with a shotgun. (Frank Moreau.)

Always use the shotgun for taking seals. I lose very few, as I always shoot them close to the boat. (Matthew Norris.)

I can not say how many seals are killed and wounded, but there is no doubt that green hunters lose many, while those more experienced in business lose fewer. (Morris Moss.)

We used the spear more than the gun and secured nearly all of them that we hit with it, but lost a great many seals that we shot. We prefer to use the spear, because in so doing we do not lose so many or frighten them away. (Osly.)

The shotgun is not as fatal as the rifle, but it ruins the skins of the seals. (Adolphus Sayers.)

Breech-loading firearms (rifles and shotguns) are the instruments principally employed by pelagic fur-seal hunters, both native and white. By means of these weapons a greater number of skins are secured in a season than when spears are used; but the proportion of seals struck and lost to those actually secured is much less than when the spear is used. (John W. Smith.)

The best hunter will fire about 20 cartridges, and they get 10 or 12 seals, while a hunter of less experience will fire 100 rounds and get nothing, but will wound and disable them. (Adolph W. Thompson.)

I have always used spears in hunting the seal, and seldom lose, any I hit. (Charley White.)

In attempting to determine the sex of seals killed in the Bering Sea and the North Pacific, and of the number of seals killed in excess of those actually secured by the hunters, I had interviews with upward of fifty seal hunters, aside from interviews subsequently had with Indian hunters. I find this portion of my work by far the most difficult. Much discussion had already been had about the damaging effect of pelagic sealing, and the hunters were loath to tell how many seals were killed and not recovered, and were often averse to making truthful reports about the sex of the animals killed, but by frequenting their haunts and cultivating their company for long periods I succeeded in getting accurate statements from a number of them. (Theo. T. Williams.)

I found that at first the hunters were disposed to brag of their skill

and to overestimate their success in securing skins of seals shot at. The reason for that was that I was about to engage in sealing enterprises and that I was making inquiries for the purpose of ascertaining their skill as hunters, with a view to engaging them. The practice in British Columbia is to pay the best hunters the highest rate per skin. Men who could shoot fairly well, but who use a shotgun, could be secured for a sealing voyage from $1 to $1.50 per skin, while hunters who shot with a rifle and were of recognized skill in some instances were paid as high as $2.50 per skin, and, generally speaking, as high as $2 per skin. The reason for this is obvious to those who have interested themselves in the sealing business. A seal killed with buckshot is so much punctured frequently that the pelt is of lesser value. It is not profitable for schooners to engage as hunters men who miss their chances of killing the seals and blaze away indiscriminately, with small results. Even though the hunter is only paid for the skin he recovers, the loss to the vessel by his failure to kill when an opportunity offers is equivalent to the profit it would have made on the skin if secured. For these reasons and on account of the general proneness of men who consider themselves experts in the use of any weapon to brag, the seal hunters of British Columbia, as a class, grossly exaggerate the percentage of skins they recover to the number of seals aimed at, wounded, or killed. (Theo. T. Williams.)

In attempting to ascertain exactly the number of seals killed and lost by the Bering Sea hunters, I found a wide divergence of statement. It is greatly to the advantage of the seal hunter to have the reputation of losing but few seals. He is paid by the skin, and the more he catches the greater his remuneration; but that is not all. The hunter with the best reputation as a sure catcher is in the greatest demand, can secure employment in the best schooner, and the largest sum of advance money. Besides self-interest, there comes vanity to urge the hunter to make the biggest reputation possible for himself. To use a common expression, the seal hunters all brag about their sureness of aim. The best shots use a rifle and fire at a range of from 50 to 125 yards. The poorer shots depend on a shotgun loaded with buckshot, and will fire at a seal up to 50 yards away. The Indian hunters use spears, and paddle noiselessly up to the sleeping seal to plunge the spear in its shoulder. They never attempt to spear a seal that is awake. An Indian hunter will paddle in among a lot of "sleepers" and spear them one after the other, while a white hunter, who uses firearms, alarms every seal in the neighborhood at the first discharge. The Indians lose about one-third of all they spear, either from failure to kill when they strike or because the dead seal sinks too quickly for them to secure it. The white hunters do not get one-half of all they shoot. Some hunters are very careful shots and will not fire unless the seal is well within range, but the seal is likely to sink before the boat can get to it, or if wounded, will dive like a flash to get away. A number of hunters have boasted that they secure 95 seals for 100 shots, and some have made affidavits of even more wonderful exploits. They presume too much on public ignorance and credulity. (Theo. T. Williams.)

Fortunately, it is not necessary to depend on the statements of the seal hunters. I secured access to the ship accounts of several sealers, and found that in every case the consumption of ammunition showed more than ten cartridges used for every seal skin captured. I spent considerable time among the Siwash Indian sealers, and, while they brag of *their individual* prowess, they admitted a loss of 30 per cent at least.

On this subject I append a statement made by Captain Olsen, of the sealing bark *Bessie Ruter*, at Victoria.

Captain Olsen, of the American schooner *Bessie Ruter*, of Astoria, reached Victoria September 27, 1889. In the office of the American consul, Col. R. Stevens, he said: "I took 550 skins in Bering Sea. Of these 27 were pups, 520 females, and 3 male seals, which I killed off the island of Kadiak. Most of the female seals were with young. I had a green crew and green hunters. They used shotguns and sometimes the rifle. They got about one seal for every three they aimed at. Some they missed altogether, and some of the wounded ones got away. There is great risk of losing a traveling seal. The sleeping seals blow up an air bladder that keeps them from sinking, but the seals when awake sink easily. Hooks are used to grapple them, but if the boat is some distance from the seal when it is killed it does not often get it. For that reason rifle shooting at long range hardly pays. I will get about $7.75 for some of my skins and $8 for others. My voyage will pay, because I ran the boat on the cheap. I only had two men to the boat, and only paid my hunters $1 per skin instead of $2, which is paid to first-class hunters. Some very skillful hunters do not lose many skins. They will never fire unless a seal is at close range, and they generally kill. Of course they lose some from sinking. All the hunters brag about how few they lose, because they want the reputation of being good hunters. The better reputation they have the better chance they get.

If Bering Sea were open many new men would come into the business and the loss would be greater. Only a few men make successful hunters. It is like being a clever rifle shot. If the best hunters lose ten or fifteen in a hundred, the other kind lose ten times as many, if not more. Green hands will throw away a lot of ammunition, shooting at everything they see, whether it is in range or not. You can not stop them. They will wound more than they kill. (T. T. Williams.)

DESTRUCTION OF NURSING FEMALES.

We entered Bering Sea through the Muckawa Pass the 1st of July, and commenced hunting seals wherever we could find them, among which were a great many cows giving milk, which we killed from 30 to 150 miles from the islands. (Charles Adair.)

I have no exact information as to the proportion of male and female seals killed by pelagic hunters, but it is my firm conviction, from my knowledge of the habits of the males in not leaving the islands during the breeding season, and the well-known fact that mother seals go great distances in search of food while nursing their young, that the females are slaughtered in great numbers during their jouneys to and from the islands by pelagic hunters. (George R. Adams.)

And when in Bering Sea we take seals from 10 to 120 miles from the seal islands. (William Bendt.)

And the larger proportion of those killed in Bering Sea are also cows. Have killed cow seals, with milk in them, 65 miles from the Pribilof Islands. * * * A few male seals are taken, ages ranging from 1 to 5 years. Once in a while we catch an old bull in the Pacific Ocean. (Martin Benson.)

We came out of Bering Sea the latter part of August and had caught about 1,700 seals between the Pribilof Islands and Unalaska. We caught them from 10 to 100 or more miles off St. George Island. (Niels Bonde.)

We entered Bering Sea the middle of May and captured 300 while in there. Most of these were mother seals with their breasts full of milk. (Thomas Bradley.)

I hunted in Bering Sea in 1889 (that being the only year I ever went to that sea) and hunted seals with spears about 70 miles southwest off the islands, and our catch was nearly all cows that had given birth to their young and had milk in their teats. (Peter Brown.)

Have killed cows with milk about 60 miles off the Pribilof Islands. A few old bulls were killed by me last season. (Charles Campbell.)

At least seven out of eight seals caught in Bering Sea were mothers in milk. (Charles Challall.)

We entered the sea through the Unimak Pass, and captured therein about 40 seals, most all of which had milk in their breasts. (Louis Culler.)

The waters were full of them at that time. We caught them from 50 to 60 miles off the seal islands. (John Dalton.)

But the seals I caught in Bering Sea were most all cows in milk. (Frank Davis.)

The proportion of female seals killed in Bering Sea is equally large, but the destruction to seal life is much greater, owing to the fact that when a mother seal is killed her suckling pup left at the rookery also perishes. Impregnation having also taken place before she left the rookery in search of food, the fetus of the next year's birth is likewise destroyed. (James H. Douglass.)

We left San Francisco and fished up the coast until we entered Bering Sea, in July, and sealed about the sea until we were driven off by the revenue cutter *Corwin*. From there we went to the Copper Islands. Our whole catch amounted to 900 skins, and we killed most of them with rifles. We only got about one out of eight that we shot at, and they were most all females giving milk or in pup. When we cut the hide off you could see the milk running from the breasts of the seals. The second year we got over 1,300 skins; some of them were cows with pups in them, and most all the rest were cows giving milk, and some of the latter we killed as far from the rookeries as Unimak Pass. (Peter Duffy.)

We entered Bering Sea about April and we got 795 in there, the largest part of which were mother seals in milk. When we were skinning them the milk would run on the deck. (John Fyfe.)

I know that fully 75 per cent of those we caught in Bering Sea were cows in milk. (Thomas Gibson.)

My observation and the information obtained from seal hunters convince me that fully 90 per cent of the seals found swimming in Bering Sea during the breeding season are females in search of food, and their slaughter results in the destruction of her young by starvation. (M. A. Healy.)

While in Bering Sea we cruised around the Pribilof Islands in all directions, often coming within view of them but never landing or making any attempt to do so. The proportion of females taken to males was about 70 per cent, more than two-thirds of these being nursing cows, while the remainder were 2 year olds and yearlings. On first entering the sea an occasional pregnant cow would be taken, but this *was uncommon.* Of the males taken in Bering Sea the numbers of

yearlings and very young bachelors was about equal; no bulls were ever taken. (Norman Hodgson.)

Those that I secured in Bering Sea were nearly all females and had given birth to their young and were in milk. Our vessel captured about 460 seals at a distance of about 100 miles from the Pribilof Islands, most all of which were cows in milk. (Alfred Irving.)

We entered the sea and caught about a thousand there. We sealed all over on this side of Bering Sea, sometimes being over 150 miles off the seal islands, and sometimes we were closer. I did not pay any attention to the proportion of females, but I know we skinned a great many that were giving milk, because the milk would run from their breasts onto the deck when they were being skinned. We killed mother seals in milk over 100 miles from the seal islands. We generally shoot them when they are asleep on the water. * * * We caught between 300 and 400 seals on the coast and 600 in Bering Sea. We sealed on the American side of Bering Sea around the Pribilof Islands, anywhere from 10 to 150 miles off. The capture of 1890 was about the same in proportion to sex as the year before. (James Kean.)

We entered Bering Sea about the latter part of July and captured 260 seals from 20 to 100 miles off the seal islands. A large proportion of them were females nursing their young and their teats were large and full of milk. (James Kennedy.)

I have observed that those killed in the North Pacific were mostly females carrying their young and were generally caught while asleep on the water. (James Kiernan.)

The same day after a chase of an hour we were seized by the U. S. S *Mohican*. The total catch of seals at the time of seizure was 48, and at least 20 were females, the majority of which were in milk. All the seals were taken from 120 to 180 miles from St. George Island. (Francis R. King-Hall.)

When in Bering Sea we are usually from 50 to 150 miles from the Pribilof Islands. (Andrew Laing.)

I have killed females in milk in Unimak Pass, and even out in the Pacific Ocean, 200 miles from the land. (E. N. Lawson.)

In Bering Sea, where we obtained about 400 skins, males and females in about equal numbers were taken. The females were mostly nursing cows, while the males were young ones, between the ages of 2 and 5 years. (James E. Lennan.)

Another fact in connection with open-sea sealing is that the great majority of seals killed are females, and that a great part of the females are pregnant, or in milk. The milking females are most all killed while visiting the feeding grounds, which are distant 40 or 60 miles, or even farther from the islands. The female necessarily feeds so that she can supply nourishment for her young, while the males during the summer seldom leave the islands. This accounts for the large number of females killed in Bering Sea. (A. P. Loud.)

Q. Did you ever kill any seals later in the season that were giving milk?—A. Yes, sir. (Alexander McLean.)

Those we caught in Bering Sea were mostly all females with milk in their breasts. * * * The next season, 1890, we got on the way up between 100 and 200 seals, and then we entered Bering Sea about the

18th or 19th of July, and I caught 90 seals, mostly all females. * * * When we were in Bering Sea we hunted from 40 to 200 miles off the seal islands. (Patrick Maroney.)

About two-thirds of those caught in Bering Sea were females that had big teats and were giving milk. We could tell that when we were skinning them, because the milk would run out on the decks. (William Mason.)

We sealed around Unalaska, but did not go toward the Pribilof Islands. We caught 1,900 seals, all of which were captured in the sea, close to Unalaska; most all of them were cows in milk; but when we first entered the sea we killed a few cows that had pups in them. * * * That year we sealed east of the island and caught about 800 seals. I do not know how far we were from the islands, for we could not see them. The seals we caught were mostly cows with milk. (Moses.)

I was sealing in Bering Sea during July, August, and September, 1885 and 1886. I was cruising in Bering Sea around about the Pribilof Islands, and from 100 to 300 miles off. The principal portion of the cruising was between the Aleutian and Pribilof islands. One of the principal sealing grounds is off Bogslof. (Niles Nelson.)

After entering the sea we got one female with a very large pup, which I took out alive and kept it for three or four days, when it died, as it would not eat anything. All the others had given birth to their young, and their breasts were full of milk. (John Olsen.)

The seals taken in Bering Sea are nearly all grown. We get but very few young seals. I think we catch in Bering Sea more males in proportion to females than we do on the coast. We catch a good many females in Bering Sea that have given birth to their young on the islands and are in milk. I have caught plenty of cow seals in milk 100 miles or more from the islands, but seldom get any that have a pup in them in those waters. (William Parker.)

We entered Bering Sea about the 15th of August through the Unimak Pass and captured therein 1,404 seals, most of which were cows in milk. On that voyage we caught female seals in milk over 80 miles from the rookeries where they had left their young. (Charles Peterson.)

The seals captured in Bering Sea were fully 80 per cent females that had given birth to their young. A fact that I often noticed was that their teats would be full of milk when I skinned them, and I have seen them killed from 20 to 100 miles from the seal islands. (Edwin P. Porter.)

Q. How do you know that the marauders kill females principally?—A. I know that the females, after giving birth to their young on the rookeries, frequent the open sea in search of food, whereas the males frequent the hauling grounds or waters immediately around it. At various times I have seen skins which were seized by the cutters from the poachers, and they were substantially female skins. (J. C. Redpath.)

I have been in Behring Sea but a part of one season. Of the seals taken, about one-third were males, one-third females with young, one-third barren and yearlings. (W. Roberts.)

I have taken nursing females when as much as 100 miles from Pribilof Islands. I estimate that the seals killed by pelagic hunters are at least 90 per cent females; this estimate is based on the great number *of motherless* pups I have observed on the rookeries, and also on state-

ments made to me by many engaged in pelagic sealing whom I met and conversed with at Unalaska. (T. F. Ryan.)

We caught 767 seals in Bering Sea that year (1884) from 30 to 150 miles off the seal islands. The most of them were females, for the reason that they are not as cute as males. A great many of the females had their breasts full of milk, which would run out on the deck when we skinned them. * * * My third voyage was in 1889. I sailed from Yokohama on the *Arctic*, about the latter part of January. We cleared under the American flag. * * * We entered Bering Sea about the 17th of May and caught about 900 seals, the most of them around the fishing banks just north of the Aleutian Islands. The majority of them were mother seals. (James Sloan.)

The majority of seals taken in Bering Sea are cows with milk. But a very few yearlings are taken, and once in a while an old bull is taken. The male seals taken are between 2 and 4 years old. * * * I have taken female seals 80 miles off the Pribilof Islands that were full of milk. (Fred Smith.)

Have killed cow seals that were full of milk over 40 miles from the Pribilof Islands. (Joshua Stickland.)

I have never captured any cows in milk along the coast, but when in Bering Sea in 1889 I sealed off about 90 miles from the seal islands and caught cows in milk there. (John Tysum.)

The majority of seals killed in the water are females, and all the females killed in Bering Sea are mothers who have left their pups on the rookeries and gone some distance from the island in search of food. (Daniel Webster.)

Ninety-five per cent of all the seals killed in Bering Sea are females. (Theo. T. Williams.)

Thousands of the female seals were captured by the pelagic hunters in Bering Sea during the season of 1891, the most of which had to be secured quite a distance from the rookeries, owing to the presence of armed vessels patrolling the sea for miles around the islands. That the slaughter of the seals was mostly of females was confirmed by the thousands of dead pups lying on the rookeries, starved to death by the destruction of their mothers. (W. H. Williams.)

We caught a few seals in there (Bering Sea). When we first went in we did not see many, but after we were there awhile we saw plenty of them that had large breasts that were full of milk, and our catch were most all females. The average would be about one male to ten females. We killed cows in milk 150 miles from the seal islands. (John Woodruff.)

DESTRUCTION OF FEMALE SEALS.

Testimony of pelagic sealers.

My experience in seal hunting is that a much greater number of females are taken at sea than males of the fur-seal species; and of the females the majority are pregnant or milking. (Andrew Anderson.)

Q. Do you know of what sex the seals were that you have taken in the Pacific and Bering Sea?—A. Yes; I have taken both male and female seals, but I suppose the greater per cent that I have taken would be about 90 per cent, or even *more*.

Q. What percentage of the skins you have taken were cows?—A. About 90 per cent, for the simple reason that the bulls are not migratory. (George Ball.)

Most all the seals taken by me have been cows. I think cows sleep more and are more easily approached. Never killed but seven old bulls on the coast of Washington in my life, but have taken a few pups every year. (Wilton C. Bennett.)

Think the majority of the seals taken are cows. Never killed but two old bulls in my life. Have killed quite a number of yearling seals and some young males 2 or 3 years old. (Edward Benson.)

Q. Do you know of what sex the seals were that you have taken in the Pacific and Bering Sea?—A. Mostly females.
Q. What percentage of the skins you have taken were cows?—A. About 80 per cent. (Daniel Claussen.)

From my experience, observation, and conversation with seal hunters I am of the opinion that fully 75 per cent of their catch are females. (Leander Cox.)

I saw one schooner's catch examined at Unalaska in 1889, and there were found a large percentage of female seals among them. (M. C. Erskine.)

Of those taken probably four out of five are females. (F. F. Feeny.)

The seals taken by them (the *C. H. White* and the *Kate Manning*) were nearly all females. (George Fogel.)

Have never killed an old bull in my life, nor have seen one the last few years. (Luke Frank.)

Q. Do you know of what sex the seals were that you have taken in the Pacific and Bering Sea?—A. The majority of them are females. Last year I killed 72, and out of the 72 there was only 3 males.
Q. What percentage of the skins you have taken were cows?—A. About 90 to 95 per cent. (Luther T. Franklin.)

Off Cape Flattery there is hardly a dozen large males taken out of every thousand large seals whose skins are called first class; all the males taken here are small ones. (Thomas Frazer.)

Q. Do you know of what sex the seals were that you have taken in the Pacific and Bering Sea?—A. About 90 per cent of them were females.
Q. What percentage of the skins you have taken were cows?—A. About 90 per cent. (Edward W. Funcke.)

We caught about 160 seals before entering the sea. Over 100 of them were cows. (John Fyfe.)

Caught 1,500 seals on that voyage. We caught some a little ways from Victoria, and on the way up to Bering Sea, but the most of them, about 1,200, we caught in Bering Sea. I was told by the men that they were nearly all females, and I thought so, too, from the milk that I saw in their breasts when they were on the deck. I saw over a hundred little pups taken from the seals, which they threw overboard. (George Grady.)

To the best of my knowledge and belief about seven of every ten *seals killed in* pelagic sealing are females. (W. P. Griffith.)

Q. What sex are the seals taken by you or usually killed by hunting vessels in the North Pacific or Bering Sea?—A. Mostly females. The biggest percentage, I think, are females.

Q. What percentage of them are cows?—A. I couldn't tell you.

Q. Out of 100 seals that you would catch ordinarily what part of them would be cows?—A. I am under oath, and I could not tell you exactly. All I can say is the greater portion of them. (Charles H. Hogman.)

Think the seals taken by me have been about equally divided between females and males. Have taken a number of yearlings and some 2 and 3 year old males. Have never killed an old bull. (Henry Haldane.)

Q. Do you know of what sex the seals were that you have taken in the Pacific and Bering Sea?—A. Two-thirds of them are females.

Q. What percentage of the skins you have taken were cows?—A. Two-thirds, I should say. (William Henson.)

Q. Do you know of what sex that you have taken in the Pacific and Bering Sea?—A. The seals that I have taken were principally females.

Q. What percentage of them are females?—A. It is very seldom that you ever get hold of a male. (Gustave Isaacman.)

My experience has been that the sex of the seals usually killed by hunters employed on vessels under my command, both in the ocean and Bering Sea, were cows. I should say that not less than 80 per cent of those caught each year were of that sex. (James Kiernan.)

We caught about 400 or 500 seals before we got to Bering Sea. I don't know the precise number. They were bulls and females mixed in, but the general run of them were females. (William Isaac.)

Q. Of what sex are the seals taken by you or usually killed by hunting vessels in the North Pacific or Bering Sea?—A. Principally females.

Q. What would be your judgment as to the percentage? Out of 100 that you kill, how many of them would be females?—A. Say I would bring 2,000 seals in here, I may have probably about 100 males; that is a large average. (Alexander McLean.)

Q. What percentage of them are cows? Suppose you catch 100 seals, how many males would you have among them?—A. About 10. The seals killed by me were about half males and half females; have killed but one old bull in my life. I have killed quite a number of yearling seals, but never examined them as to sex. (Frederick. Mason.)

Q. Do you know of what sex the seals were that you have taken in the Pacific and Bering Sea?—A. Mostly females.

Q. What percentage of the skins you have taken were cows?—A. I should judge about 90 per cent. (Frank Moreau.)

I can not give the exact estimate of the sex, but I know that a large portion of them are females. (Niles Nelson.)

In going up the coast to Unimak Pass we caught about 400 seals, mostly females with young, and put their skins on board the *Danube*, an English steamboat, at Alatack Bay, and after we got into Bering Sea we caught 220. We had 200 at the time the lieutenant ordered us out of the sea, the remainder we caught after. (John Olsen.)

We began sealing off Cape Flattery and captured about 300 seals along the coast, most all of which were females and yearlings. We did not capture over 50 males all told on this voyage. About 90 per cent

of all the seals we captured in the water were female seals. We caught 350 seals along the coast, all of which were females excepting 20. (Charles Peterson.)

The majority of seal killed by me have been cows; have killed a few small males. (Showoosch.)

From what I have been able to learn, the majority of seals taken around Kodiak are females. (John C. Tolman.)

In my conversation with men engaged in seal hunting in the open water of the North Pacific and Bering Sea, I have not been able to get sufficient information to form a reliable estimate of the average number saved out of the total number shot nor of the percentage of females killed. As a rule, the hunters are extremely reticent about giving information on the subject to officers of the Government, but from the well-known fact that the female seal is much more easily approached than the male, and sleeps more frequently on the water, and is less active when carrying her young, I have no doubt that the female is the one that is being killed by the hunter. (Francis Tuttle.)

I believe the number they secure is small as compared with the number they destroy. Were it males only that they killed the damage would be temporary, but it is mostly females that they kill in the open waters. (Daniel Webster.)

I never paid any particular attention as to the exact number of or proportion of each sex killed in Bering Sea, but I do know that the larger portion of them were females, and were mothers giving milk. (Michael White.)

DECREASE OF SEALS.

Opinions of white sealers.

I have noticed a perceptible and gradual decrease in seal life for the past few years, and attribute it to the large number of vessels engaged in hunting them at sea. (Andrew Anderson.)

In the sea, seals are much more timid and make off as fast as possible at the approach of a vessel, while formerly they were usually quite curious and would sport and play about the vessel when come up with. I believe this decrease and timidity is due to the indiscriminate slaughter of the seals by pelagic sealers. (C. F. Anderson.)

Q. To what do you attribute the decrease?—A. I attribute the decrease to the indiscriminate slaughter of the seals. (George Ball.)

I believe that the decrease in fur-seal life, which has been constant of late years, is due principally to the number of vessels engaged in hunting them at sea. (J. A. Bradley.)

Seven or eight years ago, when seals were hunted almost wholly by Indians with spears, a vessel hunting in the vicinity of Cape Flattery was sure of getting several hundred skins in about three months, from March to the end of May, but at the present time a vessel is doing well if she gets a much smaller number, because the skins bring much higher prices. The records of "catches" in the last three or four years will confirm any person who examines them in the belief that the seals are decreasing in the Pacific Ocean on the American side. I have no reason to doubt that it is the same on the Russian side. At present they are *hunted vigorously* and with better methods than formerly. The hunters

have had more experience and understand their habits better, but notwithstanding this, the catches are decreasing off the coast. (William Brennan.)

Seals were not as numerous in 1887 as they were in 1877, and it is my belief that the decrease in numbers is due to the hunting and killing of female seals in the water. (James L. Carthcut.)

Have noticed that seals are becoming very scarce on the coast the last few years. The cause of the scarcity of the seals, I think, is too many schooners in the North Pacific Ocean and Bering Sea and the indiscriminate killing of females with pup in the water. (Peter Church.)

Q. Has there been any decrease in the quantity of seals as compared to the previous years?—A. I think there has. (Daniel Claussen.)

Q. If there is a decrease, to what do you attribute it?—A. To the killing and hunting of them by seal hunters. I think the indiscriminate killing of seals in Bering Sea is the cause of their scarcity along the coast. (John C. Clement.)

There were not nearly as many seals to be found in 1889 as there were in 1888. I think the decrease is caused by the great destruction of females killed in the sea by the hunters. (Peter Collins.)

I attribute this decrease [of the seals] to the terrible slaughter now going on in the sea. (Leander Cox.)

There can be but one cause for the scarcity of seals, and that is the indiscriminate killing of them in the water, and unless that is stopped the seals must soon be exterminated. The sea otter, which were plenty on this coast at one time, are now scarcely seen at all, and the indiscriminate slaughter of them in the water has almost entirely exterminated the animal. Some few remain in the far north, but they are very hard to secure. (William Duncan.)

Until hunting and killing were commenced by hunters in the open sea, I observed no appreciable decrease in the number arriving, which was about 1884. In my opinion the chasing of the seals and the shooting of them has a tendency to frighten them and disturb them, and prevents their increasing as they would if they were left undisturbed in the waters. (M. C. Erskine.)

The large decrease of seals in the waters of the ocean and sea must unquestionably be caused by the indiscriminate killing now going on by poaching schooners, and if not discontinued it will most certainly be a matter of a very few years before the seals will be exterminated. (M. C. Erskine.)

The seals have most decidedly decreased in number, caused by the continual hunting and killing in the open sea. (F. F. Feeny.)

I give them four years more, and if they keep on hunting them as they do now there will be no more seals left worth going after. I attribute the decrease in numbers to their being hunted so much. My experience is that the seal herds in the North Pacific and Bering Sea have been greatly depleted within the last few years by the constant pursuit and killing of them in the water by hunters. (George Fogel.)

In my opinion, seals and all other fur-bearing animals are decreasing, and the cause is pelagic hunting. (William Foster.)

Q. Has there been any decrease in the quantity of seals as compared

with previous years?—A. I have not been on the islands in the last few years, but I should imagine there has been a great decrease.

Q. To what do you attribute the decrease?—A. To the number of vessels that are up there engaged in killing seals, nearly all of which are females. Last year there were 72 vessels fitted out from Victoria alone, to say nothing of vessels that are fitted out at other places. (Luther T. Franklin.)

The seals are not so numerous off Cape Flattery as they used to be some years ago, and it is my opinion it is owing to the constant hunting by so many schooners. (Thomas Frazer.)

Q. Has there been any decrease in the quantity of seals as compared with previous years?—A. There is a decrease of about 20 or 30 per cent.

Q. To what do you attribute the decrease?—A. I attribute it to their being overhunted. (Edward W. Funcke.)

I am decidedly of the opinion that fur-seal life has considerably decreased of late years, and believe it is due principally to pelagic sealing. (A. J. Gould.)

While at anchor off St. Paul Island, the pups playing about the vessel were very few, and while making a passage between Unalaska and Pribilof Islands, during the breeding season, did not see a dozen in the open sea during the whole trip, where formerly I met hundreds. In going from Unalaska to Atka and returning, during the last of May and the first part of June of this year (1892), I did not see a single fur seal in the water. I attribute this great decrease to the indiscriminate slaughter of the species by pelagic sealers and their wasteful methods of securing skins. (Charles J. Hague.)

Q. To what do you attribute this decrease?—A. Too many in the business, I suppose; too many after them.

Q. Would you attribute it to the killing of the females, and thereby there are not nearly as many born?—A. Certainly; it has got all to do with it.

Q. Then really you attribute the decrease to the killing of the females?—A. Yes, sir. (H. Harmsen.)

I am decidedly of the opinion that the decrease in numbers of seals in the North Pacific and Bering Sea is owing to pelagic hunting, and that unless discontinued they will soon become so nearly extinct as to be worthless for commercial purposes. (J. M. Hays.)

I think the seals are not near as plenty as a few years ago, and they are much more shy and harder to catch now than they were when I first went out sealing. I think this is caused by hunting them so much with guns. (James Hayward.)

Q. If there is a decrease, to what do you attribute it?—A. To the amount of seal hunters and hunting that is actually going on. (Andrew J. Hoffman.)

Seals have decreased very fast the last three years. The decrease is caused, I think, by the indiscriminate killing of seals in the water. (E. Hofstad.)

Q. To what do you attribute the cause?—A. Killing off the females. Whale killers and sharks kill a good many. (Gustave Isaacson.)

Q. To what do you attribute the cause of this decrease?—A. The *increase of the* fleet and killing off all the females. (Frank Johnson.)

My knowledge, being from long experience, is that the seals are becoming gradually scarcer in the northern waters, particularly so in later years. The cause of this decrease I believe to be the indiscriminate slaughter of the mother seals. They are hunted too much, and hence mother seals are becoming scarcer, which, if not checked, will lead to their early extermination. (James Kiernan.)

He also told me, from his own knowledge, that the Uchuckelset Indians had a few years ago caught off the coast 1,600 seals in a season, and that now they could catch hardly any; that the white men's guns were not only destroying the seals, but driving them farther from the coast. (Francis R. King-Hall.)

In my opinion, fur-seal life has not only enormously decreased in numbers since 1886, but it has become greatly scattered and grown wilder and more timid, forsaking many places where they were formerly to be found at certain seasons of the year engaged in feeding. This I attribute to the large number of vessels engaged in killing fur seals indiscriminately at sea. (James E. Lennan.)

If they keep on hunting them in Bering Sea and the North Pacific in the same way they have done in the last few years, they will exterminate them in the same way, because most all the seals killed are females. The young ones will all die, and every female seal you shoot makes the killing of two, because after the seal has given birth to her young the pup will starve to death on the land, or when you shoot them in the water they may have a pup inside. (Caleb Lindahl.)

I have observed a very great decrease in fur-seal life since 1885, and believe it is almost entirely due to the large numbers of vessels engaged in pelagic sealing. (E. W. Littlejohn.)

The seals are much less plentiful the last year I sealed than the first. I attribute this decrease to the hunting of them in the water and the increased number of boats and men engaged in the business in the last few years. (William H. Long.)

Q. Has there been any decrease in the quantity of seals as compared to previous years?—A. There has been a decrease.

Q. To what do you attribute the decrease?—A. To the hunting of the seals in Bering Sea. (Charles Lutjens.)

There can be but one reason for the decrease, and that is they are hunted too much in the open waters. (J. D. McDonald.)

There were not as many seals in 1890 as there were in 1889. I think there are so many boats and hunters out after them that they are being killed off. They are hunted too much. (William McIsaac.)

There were not as many seals as formerly. Have noticed the decrease in the last three years; caused, I think, by the indiscriminate killing of female seal. (James McKeen.)

I was also cod fishing in 1884. There were a great many more seals in the water then than there were in 1889. In 1884, when we were cod fishing, we met the steam whaler *Thrasher*, and I heard the captain remark that it was a damned shame the way they were killing the female seals in Bering Sea. (William McLaughlin.)

Q. To what do you attribute this decrease?—A. I think this is on account of killing those female seals when they have pups, and the business is getting so that so many vessels are going into it, and they

are killing those pups off. A seal has not got a chance to go to work and increase.

Q. The mother seals?—A. Yes, sir. (Alexander McLean.)

Q. Have you noticed any decrease in the quantity of animals in the last few years?—A. Yes, sir.

Q. To what do you attribute the cause?—A. Killing off the females. (Daniel McLean.)

I have given up the sealing business because the slaughtering of the female seals is making them so scarce that it does not pay. (James Maloy.)

I think seals are not as plentiful as they used to be; caused, I think, by the indiscriminate killing of females with pup. (G. E. Miner.)

Q. To what do you attribute that decrease?—A. From the killing of seals, both by hunters and others. (Frank Morreau.)

Deponent further says that he thinks that the decrease in the number of seals found in the rookeries and the increase in the number of dead pups are caused directly by the open sealing in the sea, commonly called poaching. (T. F. Morgan.)

I am not able to say whether the seal herd is decreasing, but it is reasonable to suppose that where they are hunted and harassed at all times by so many hunters they are sure to be driven from their usual haunts, if not totally destroyed. (Nelson T. Oliver.)

Seals were not as plentiful in 1886 as they were in 1885. I think the principal cause of that decrease is on account of killing the females in the water, and also through their getting shy by being chased by the boats. (Niles Nelson.)

Since the use of rifles and shotguns has become common seals are much less in numbers and are more shy and timid. (William Parker.)

Seals are not near as plentiful as when I went out in 1888, and I believe the decrease is due to their being hunted so much with shotguns and rifles. (Edwin P. Porter.)

I know that the seals are rapidly decreasing, and I believe it is caused by killing females in the water. (Adolphus Sayers.)

I took very great interest in the seals, because I used to hunt them myself, and I noticed a great decrease in the number of seals from what there was formerly, when I was on sealing voyages. It was, in fact, so marked that I called the captain's attention to it, saying that we had seen very few seals. They have been getting scarcer every year since I have been going to Bering Sea, and if something is not done right away to protect them there will be no more seals in these waters. I know as a fact that they are killing them indiscriminately, and all the hunters care about it is to get a skin. I know something about it, as I have been sailing from this coast up along those waters for nineteen years, and, as I said before, I paid particular attention to them, and I firmly believe if they allow the killing in the sea to go on as they are now doing it will only be a question of a few years before there will not be enough to pay anyone to hunt them. (James Sloan.)

I think the seals are decreasing in number all the time, because there are more vessels out hunting after them and are killing off the female *seals.* (Cyrus Stepherns.)

Q. If there is a decrease, to what do you attribute it?—A. On account of so much extermination and hunting by the seal hunters. (Gustave Sundvall.)

I have heard that seal have been decreasing the last few years; caused, I think, by pelagic sealing. (W. Thomas.)

The decrease, I think, is caused by the indiscriminate killing of female seals. (Rudolph Walson.)

From what I know seals have been decreasing very fast in recent years. Think the decrease is caused by the indiscriminate killing in the North Pacific Ocean and Bering Sea. (P. S. Weittenheller.)

My experience is that the seals have been decreasing in numbers for the last six or seven years, and within the past two or three years very rapidly, owing to the indiscriminate killing of them by pelagic hunters and vessels engaged in that business in the waters of the North Pacific and Bering Sea. (Michael White.)

INCREASE OF SEALING FLEET.

Pelagic sealing as an industry is of recent origin and may be said to date from 1879. In 1880, according to the official report of the Canadian minister of marine and fisheries, 7 vessels and 213 men were engaged in pelagic sealing in the North Pacific, securing 13,600 skins, valued at $103,200. The same authority states that in 1886 20 vessels and 459 men secured 38,907 skins, valued at $389,070. In 1891 the number of United States and Canadian vessels had increased to over 100; upward of 2,000 men were engaged, and more than 62,000 skins were secured. (Report of American commissioners.)

The number of seal skins actually recorded as sold as a result of pelagic sealing is shown in the following table:

Year.	Number.	Year.	Number.	Year.	Number.	Year.	Number.
1872	1,029	1877	5,700	1882	17,700	1887	33,800
1873		1878	9,593	1883	9,195	1888	37,789
1874	4,949	1879	12,500	1884	a 14,000	1889	40,998
1875	1,646	1880	13,600	1885	13,000	1890	48,519
1876	2,042	1881	13,541	1886	38,907	1891	62,500

a Number estimated from value given.

One reason for deponent's opinion that the total number of seals in the Pacific and Bering Sea has diminished very rapidly is the fact—which deponent knows from the fact that he buys so large a portion of the poachers' catch—that there are now engaged in what is called "poaching" about 80 vessels, and that about five years ago not more than 10 vessels were engaged in poaching; that the total number of skins brought in by the whole 80 vessels is now not very much greater than the number brought in five years by 10 vessels. The poaching vessels a few years ago have been known to get as many as 3,000 or 4,000 skins, and deponent has bought 4,000 skins from one vessel, whereas no poaching vessel now gets more than a few hundred with the same size crew. One vessel last year sailing from Victoria made a catch of 1,900 skins, but this is now an altogether exceptional catch, and this vessel had a crew twice as large as poaching vessels formerly carried, and was equipped with from 12 to 15 boats instead of 5

or 6. One or two other poaching vessels also made large catches—that is, over 1,200 skins—but the average catch of the poaching vessels is not more than a few hundred each. This is true, although the poaching vessels are now equipped with much more experienced shooters, with better rifles, and with better boats than any of the vessels had five years ago. Many of the poaching vessels now have boats pointed at both ends, so that they can go backward and forward with equal ease; the old poacher only had ordinary ships' boats. Deponent knows this to be true because he has seen the boats and talked with the captains of the schooners about them. (Herman Liebes.)

I never saw many sealing schooners before 1884, but they have been coming more and more every year since, and I notice that as the schooners multiply in the sea the seals decrease on the rookeries. (Aggei Kushen.)

From 1885 to the present time the fleet of predatory vessels has constantly increased in proportion as the seal herd has decreased on the rookeries. * * * A very noticeable decrease in the herd commenced, as I have already pointed out, in 1886, and was coincident in time and proportionate in extent with the number of seals destroyed in the water. The business of pelagic sealing in Bering Sea first assumed considerable proportions in 1884, and in that year dead pup seals first became numerous enough upon the rookeries to excite remark upon the islands. As the sealing fleet increased the starved animals became more numerous. In 1887 fourteen vessels were seized for illegal sealing, and the effect was seen in the following year, when a much less number engaged in the business and the Bering Sea catch amounted, as I am informed, to about 34,000 skins against about 19,000 or 20,000 in 1888. The failure of the United States Government to vigorously pursue in 1888 and the following years the repressive policy so auspiciously begun in 1887, led to a large increase of the sealing fleet and corresponding destruction of the herd, but the prohibition of pelagic sealing nevertheless continued, and the usual proclamation was published by the Government warning all parties not to kill seals in Bering Sea or waters adjacent to the Alaskan coast. (H. H. McIntyre.)

Up to 1883 and 1884 it was only an occasional venturesome vessel that came around and secured a few hundred skins and thought itself lucky and cleared out, but since that time not even the smallest craft is satisfied unless it secures its thousands of pelts regardless of sex. (W. S. Hereford.)

While in Bering Sea during the summer of 1869 I never saw a vessel sealing about the islands or anywhere in the sea, nor did I hear any report of the presence of such sealing vessels in those waters. (J. A. Henriques.)

I do not know of any sealing schooner that went to Bering Sea until Captain McLean went there about nine years ago in the *Favorite*. (William Parker.)

Q. What effect, in your opinion, does the increase in the number of poaching vessels in Bering Sea have upon seal life?—A. Since the number of sealing vessels has increased the number of seals coming to the islands has correspondingly decreased. * * * In 1884 the sealing schooners became numerous. I believe there were about 30 in the sea that year, and they have increased very rapidly every year since, *until now* there are said to be about 120. (J. C. Redpath.)

I first went out in 1885, in the schooner *City of San Diego*, chartered by myself and others, and my catch for that year was between 2,300 and 2,400 seals. Of that number about 1,900 were caught in Bering Sea. There were but very few vessels sealing at that time. (Michael White.)

DECREASE OF SEALS—PELAGIC SEALING THE SOLE CAUSE.

Opinions of Indian hunters.

Fur seals were formerly much more plentiful, however, but of late years are becoming constantly scarcer. This is, we think, owing to the number of vessels engaged in hunting them at sea. (John Alexandroff.)

Fur seals were formerly observed in this neighborhood in great numbers, but of late years they have been constantly diminishing, owing to the large number of sealing vessels engaged in hunting and killing them. (Nicoli Apokchee.)

I have noticed that seal have decreased very rapidly in the last three years, owing to too many schooners engaged in sealing along the coast of Alaska and Bering Sea. (Adam Ayonkee.)

The seal are not near as plentiful as they used to be. The cause of the decrease is, I think, too many schooners hunting them off Prince of Wales Island and around Dixons Entrance. (Maurice Bates.)

Seal are not as plentiful on the coast as they used to be. They have been decreasing very fast the last few years. I think this is caused by the indiscriminate killing in the water. (Wilton C. Bennett.)

Seal are getting very scarce. I think the cause of the scarcity is too many people hunting seal. (Edward Benson.)

Seals were very plenty in the straits and around the cape until about six years ago, when the white hunters came in schooners and with shotguns and commenced to kill them all off, and now there is none in the straits and we can not get but one or two where we used to get eight or ten. They are very shy and wild, and are decreasing very rapidly. (Bowa-chup.)

White hunters came here about five or six years ago and commenced shooting the seals with guns, since which time they have been rapidly decreasing and are becoming very wild. When we hunt seals with spears we creep upon them while asleep on the water and spear them. A few years ago my people would catch from 8,000 to 10,000 each year; now we get only about 1,000 or less. * * * Seals used to be very numerous along the coast about Cape Flattery, and no decrease was ever noticed in their numbers until soon after the white hunters came around here—about seven years ago—and commenced shooting them. Since that time they have decreased fast and have become very shy. (Peter Brown.)

They were formerly much more plentiful than now, which is owing, we believe, to the number of vessels engaged in killing them at sea. (Ivan Canetak.)

Years ago seals were very plentiful from 5 to 10 miles from the shore. I could see them all around in bunches of from 10 to 20 each, but since the white man has commenced to kill them with the rifle and shotgun (in the last five or six years) they have decreased very rapidly. (Charlie.)

Fur seals have decreased very rapidly during the last five years, and we believe it is due to the large number of vessels engaged in hunting them at sea. (Vassili Chichinoff.)

Have noticed the seal are decreasing very fast the last four years; too many schooners are hunting them in the open waters of the Pacific Ocean and Bering Sea. (Chin-koo-tin.)

The last five years fur seal has been growing very scarce, and it is hard to get any now. There are too many white men with schooners hunting them off Dixons Entrance, and unless it is stopped the seal will be all gone. (William Clark.)

Seals are now very scarce and wild along the coast. I believe the cause of this is that white hunters have been hunting them so much with guns. (James Claplanhoo.)

Seals used to be very plentiful, and I never noticed any decrease in their number until white hunters commenced coming here and killing them with guns, about six or seven years ago; since that they have decreased very rapidly and have got very shy. Our tribe used to have no difficulty in catching 8,000 to 10,000 seals and now we can not get a thousand. (Circus Jim.)

I have been out sealing on the coast this spring in a schooner that carried 10 canoes, with two hunters to each canoe. We were out three days and caught 5 seals. If we had been out that long six or eight years ago with the same crew we would have taken between 60 and 100 seals. Seals are wild and shy now, and have become very scarce. I think the reason for this is that they have been hunted so much by white hunters who use firearms. (Jeff. Davis.)

Some years ago the fur seal were plenty off the islands, but since the schooners have hunted them they are nearly all gone, and it is hard for the Indians of this village to get any. (Eshon.)

Seals are not so plentiful as they were a few years ago. They began to decrease about five or six years ago. A good many years ago I used to capture seals in the Straits of San Juan de Fuca, but of late years, since so many schooners and white men have come around here shooting with guns, only a few come in here and we do not hunt in the Straits any more. I used to catch 40 or 50 seals in one day, and now if I get 6 or 7 I would have great luck. I have to go a long distance to get seals now. Seals are wild and afraid of an Indian. They have become so since the white men and the trader began to shoot them with shotguns and rifles. In a short time there will be no seals left for the Indian to kill with a spear. (Ellabush.)

Fur seals were formerly much more numerous than of late years, and are each year becoming constantly scarcer. I believe this decrease is due to the number of vessels which are engaged in hunting them at sea. (Vassili Feodor.)

When I was a young man there were lots of seals around Queen Charlotte Islands, but now they have become scarce. The last few times I was out after them I did not see a seal. They have been growing scarcer every year since the white man began hunting them in schooners. (Frank.)

Fur seal are not as plenty as they used to be, and it is hard for the Indians to catch any. I think there are too many white men in *schooners hunting* seals around Dixons Entrance. (Chief Frank.)

Since the white men have been hunting the seal with schooners they have become very scarce, and it is hard for the Indians to get any in their canoes. (Luke Frank.)

Seal have decreased on the coast very fast the last four years. The reason of the decrease is too much hunting and indiscriminate killing. (Chad George.)

The seal are becoming very scarce, caused, I think, by the white men hunting them too much. (Charles Gibson.)

Seal are becoming very scarce this last three or four years, and Indian hunters can hardly kill them now. Too many schooners are hunting seal, and Indian hunters have to go a long way in their canoes in order to get any, and they seldom kill one. (Gonastut.)

Have noticed that seals are decreasing the last four years, caused, I think, by too many white men hunting seal in the waters of the Pacific Ocean and Bering Sea. (James Gondowen.)

Fur seals have decreased in numbers of late years, and we believe it is due principally to the large number of vessels hunting them at sea. (Nicoli Gregoroff.)

The seal are not nearly as plentiful as they once were, and I think they are hunted too much by schooners. (Henry Haldane.)

Seals are not as plentiful now as they were before white men commenced hunting them with guns around here some six or seven years ago. They are more shy now and it is much more difficult for the hunters to creep up and spear them than it was a few years ago. (Alfred Irving.)

Years ago we could see seals all over the water. They are not so plentiful now. They have been growing less and less ever since the white man came in and began to hunt them with guns, about six or seven years ago, and so many vessels went into the business. (Ishka.)

My idea is that there are too many camp fires around on the coast of Alaska that scare the seals out to sea. The seal smell the smoke and wont come near the land; and there are a large number of people shooting seal, which scares them away also. (Jack Johnson.)

There are too many schooners hunting seal off Prince of Wales Island, and it is hard for Indians to get any in canoes. (Johnnie Johnton.)

Have noticed that seal are decreasing very fast the last few years along the coast, caused, I think, by pelagic sealing. * * * Think the seals are most all killed by the pelagic seal hunters in the waters of the North Pacific Ocean so far from the land that the Indians have no chance to get any in canoes, as they only go a short distance from the shore. (P. Kahiliday.)

Do not know why the number of the fur seal seen about these islands are now less than in former years. (Samuel Kahooroff.)

I think the seal are about as plentiful along this coast, but much more scarce farther west. The cause of this scarcity is too much pelagic hunting. (Philip Kashevaroff.)

When I was a young man the seal were very plentiful around here, but since the schooners began hunting them they have become very scarce. The white hunter destroyed the sea otter and will soon destroy

the seal. I don't like to see the schooners around here hunting seal, for they kill everything they see, and unless they are stopped the seal will soon be gone. The sea otter is already gone. (King Kashwa.)

Seals have been growing scarcer the last five years, since the white man began hunting them with schooners, and if they are not stopped the seal will soon be all gone. (Jim Kasooh).

Seals have decreased very rapidly along this coast in the last three or four years. The decrease is caused, I think, by schooners using shotguns and rifles and killing mostly female seals. (Mike Kethusduck.)

The reason of the scarcity is, I think, that there are too many white hunters sealing in the open waters. (Kinkooga.)

Seal are becoming very scarce on the coast. The reason they are becoming so scarce is that hunters shoot them with guns and kill cows with pup. (O. Klananeck.)

Seal used to be plentiful, but now they are nearly all gone. They are too much hunted by the white men with schooners. (James Kloracket.)

Seal have become very scarce the last three years, and what few there are are very wild and hard to get at. I think the reason that seal have become scarce is that they are hunted too much, and too many females killed with pup. (Robert Kooko.)

Have noticed that seal are decreasing very fast the last few years. I think the cause of the decrease is that there are too many schooners hunting seal in Bering Sea and along the North Pacific Coast. (John Kowineet.)

Seal are not as plentiful as in former years; have noticed the decrease in the last three or four years. Think the cause of the decrease is the great number of schooners sealing in the North Pacific Ocean and Bering Sea. (George Lacheek.)

Seals are not nearly so plentiful now as they used to be. About seven years ago white men commenced to hunt seals in this vicinity with guns, since which time they have been decreasing in numbers, and have become wild and hard to catch. * * * Seals are not so plentiful and are more shy than they used to be, and are more difficult to catch, because they have been hunted so much for the last five or six years with guns. (James Lighthouse.)

White hunters in numbers commenced to hunt them around Cape Flattery with guns about six years ago, and since that time the seals have decreased very rapidly. (Thomas Lowe.)

Since the white man with schooners has been hunting seal they have been growing scarcer every year, and unless they are stopped the seal will soon be all gone. The Indians now have to go a long way and suffer great hardships in order to get any. (Charles Martin.)

After careful inquiry among our oldest people and weighing my own experience and observations, I believe the decrease of the Alaskan fur seal is due altogether to pelagic hunting. (S. Melovidov.)

Since the schooners have commenced to hunt seal they are becoming very scarce, and the Indians have to go a long ways to get the few that they do. (Matthew Morris.)

Years ago seals were much more plentiful than they are now, and I

could see them all around in bunches on the water, but since the white man came here and commenced to kill them with the rifle and the shotgun, within the last five or six years, they have rapidly decreased in number. (Moses.)

When I was a young man seals were very plentiful off Prince of Wales Island and Dixons Entrance, but since the schooners have begun hunting seals they have become very scarce, and Indians now are obliged to go a long ways to kill any, and sometimes they will hunt for days without getting a seal. (Nashtou.)

Since the white men with schooners began to hunt seals, the last five or six years, seals have become very scarce, and it is hard for the Indians to get any now. They have to go a long way and hunt a long time in order to get one or two seals. (Smith Natch.)

The last four or five years seals have been growing scarcer every year, owing, I think, to too many white men hunting seals in schooners off Queen Charlotte Islands and in Dixons. (Dan Nathlan.)

I think the reason of the seal becoming so scarce every year is that there are too many white men hunting seal in Bering Sea and the Pacific Ocean and it should be stopped. (Nechantake.)

Seals are not near as plenty as they used to be; too many hunters are catching them and indiscriminately killing them. (James Neishkaitk.)

When I was a young man seals were much more plentiful than they are now. The last three years, since the schooners began hunting seals, they have become very scarce, and it is hard for the Indians to get any now. This year they have killed but two. (Nikla ah.)

The Indian fur-seal hunters of my people all tell me that the fur seal are becoming very scarce; too many white men are killing them all the time, and they kill cows with pup, as well as other kinds. I am the chief of my people, and they all tell me what they know. (Peter Olsen.)

Seal are getting very scarce along the coast; cause of the scarcity is, I think, too many schooners hunting them off Prince of Wales Island. (Abel Ryan.)

Since the schooners have hunted seal off the Prince of Wales Island the seals have become scarce, and it is hard for the Indians to get any in canoes. In former times they used to get plenty. (Jack Shnoky.)

The disappearance of the fur seal is due to the killing by pelagic seal hunters, who appear in large numbers off this part of the coast; and the scarcity of the fur seals is in proportion to the number of vessels engaged in seal hunting. (Alex. Shyha.)

Seal have become very scarce the last few years. Too many white men are engaged in killing seal. (Martin Singay.)

Have noticed a large decrease in seal in the last three years, caused, I think, by pelagic sealing in Bering Sea and the North Pacific Ocean. (Jack Sitka.)

Since the white men have been hunting with schooners they have become very scarce, and Indians are obliged to go a long way and stop away from home a long time in order to get any, and after being away there four or five days they frequently return without killing one seal, they have become so scarce. (Thomas Showl.)

There are no seal left now; they are most all killed off. The last ten

years the seal have been decreasing very fast—ever since the white men with schooners began to hunt them. (George Skultka.)

Seal have been growing scarce along the coast the last four years. Think there are too many schooners engaged in sealing in the North Pacific Ocean and Bering Sea. (M. Thlkahdaynahkee.)

Have noticed a large decrease the last four years. I think that pelagic sealing in Bering Sea is the cause of the seal becoming scarce along the coast. (Charlie Tlaksatan.)

Have heard all the Indians of different tribes say that seal are becoming very scarce in the last three or four years. They also say that unless the schooners are stopped from sealing in Bering Sea and the North Pacific Ocean the seal will all be gone, and none will be left for the Indians or anyone else. The seal have become so scarce of late years that I don't know much about them. (Twongkwak.)

During the last five or six years seals have decreased in numbers very rapidly. A great many of the white men are poor hunters and lose a great many of the seals that they shoot. They shoot, and shoot, and shoot, and don't get any seals, and that makes them wild, so that an Indian can't get near them with a spear. (John Tysum.)

Have noticed the seal have been decreasing along the coast the last four years. Think the cause of the decrease is that there are too many schooners engaged in pelagic sealing in Bering Sea. (James Unatajim.)

Last year was a very bad season. The Indians think scarcity of seals is due to the method of hunting them adopted by the whites, by which the seals are scared away. (Francis Verbeke.)

Have noticed the seal are decreasing very fast, particularly the last four years, caused by the indiscriminate killing of seal in the waters of the North Pacific Ocean and Bering Sea. (Charlie Wank.)

So many schooners and white men are hunting them with guns all along the coast that they are getting all killed off. (Watkins.)

Formerly the Indians hunted them for food, but nowadays white men and Indians hunt them for their fur, and they are rapidly diminishing in number. (Weckenunesch.)

Seals were always plenty in the Straits of San Juan de Fuca and along the coast until the white hunter came here and commenced shooting them some six or eight years ago; since that time they have decreased very rapidly. (Charley White.)

Seals are becoming very scarce since the white men began hunting them in schooners. (Billy Williams.)

Seals have become scarce the last three or four years, and the cause of it is, I think, the indiscriminate killing of seals in the water. (Fred Wilson.)

Seals are not near so plenty as they were seven or eight years ago. I think the cause of this is that they have been hunted so much by white hunters, who use shotguns and rifles. (Wispoo.)

Have noticed the seal are decreasing very fast, owing to so many schooners hunting seals in the waters of the North Pacific Ocean and Bering Sea. (Michael Wooskort.)

The seal, like the sea otter, are becoming very scarce. I think if the schooners were prohibited from taking seal in Bering Sea and along the

coast of Alaska the seal would become plentiful and the Indians could kill them once more in canoes. (Yahkah.)

Since the white men with schooners began to hunt seal off Prince of Wales Island the seal have become very scarce, and unless they are stopped from hunting seal they will soon be all gone. If the white men are permitted to hunt seal much longer the fur seal will become as scarce as the sea otter, which were quite plenty around Dixons Entrance when I was a boy. The Indians are obliged to go a long way for seal now and often return after two or three days' hunt without taking any. (Hastings Yethnow.)

Seal have been decreasing very rapidly the last few years, and it is hard for our people to get them. There are too many white men hunting them with schooners off Prince of Wales Island. (Paul Young.)

Since the white man began to hunt seal they are becoming very scarce. (Walter Young.)

Within the last five or six years seals have decreased in number very fast and are becoming very shy, and it is difficult to creep upon them and hit them with the spear. Years ago the heads of seals along the coast would stick up out of the water almost as thick as the stars in the heavens, but since the white men with so many schooners have come and began to shoot and kill them with the guns they have become very scarce. (Hish Yulla.)

If so many white hunters keep hunting the seal with shotguns as they do now it will be but a short time before they will be all gone. (Thomas Zolnoks.)

DECREASE OF SEALS—RESULTS OF INDISCRIMINATE SLAUGHTER.

It is impossible to distinguish the sex of a seal in the water, unless it is an old bull. I am unable to state anything as to the proportion of females taken, but the seal hunter shoots every kind of seal he sees. (C. A. Abbey.)

I can not tell the difference between the male and female seal while in the water, except it be an old bull. (Peter Brown.)

I shoot all seal that come near the canoe and use no discrimination, as I can not distinguish a young bull from a cow in the water. All hunters shoot everything that comes near their boats. (Akatoo.)

No discrimination is or can be used; everything is game that comes within range of the hunter's weapon. (A. B. Alexander.)

It is impossible to distinguish the male from the female at a distance in the water. (H. Andricius.)

It is impossible to distinguish sex when the seals are swimming, and killing is indiscriminate. (Charles Avery.)

The sex of seal can not be told in the water. I shoot everything that comes near the boat. (Adam Ayonkee.)

I used no discrimination, but killed everything that came near the boat in shape of a seal. Never stopped to ask if it is female or not. A few old bulls have been taken by me. (Johnny Baronovitch.)

Everything that comes near the boat in the shape of a seal is shot, regardless of sex. (Maurice Bates.)

The sex of the seal can not be told in the water; I shoot everything that comes near the boat. (Wilton C. Bennett.)

We kill everything that comes near the boat, and use no discrimination, but shoot them regardless of sex. (Edward Benson.)

We kill everything regardless of sex; the sex of the seal can not be told in the waters. (Martin Benson.)

It is almost impossible to distinguish the female seals from the male in the water unless it is an old bull. (Bernhardt Bleidner.)

It is not possible to make any distinction between males (other than large bulls) and females of the fur-seal species at sea and there is none attempted. Full-powered bulls are, however, readily recognized at sea by their much larger size and darker fur; they are seldom taken, their pelts being comparatively valueless. The slaughter is therefore indiscriminate, the object being to secure all the skins possible. (J. A. Bradley.)

We used to shoot at anything we ran across, and got about a third of what we killed or wounded. I do not know how many miles off the seal islands we were when we caught them, as I did not know the distances. (Thomas Bradley.)

It is not easy to tell a bull from a cow or either from a year-old pup when they are in the water, and the hunters must shoot at all the seals they see. If they get them they are fortunate, for at the best many are lost. Some hunters rarely miss a seal they fire at, but many are wounded, and a seal with a charge of bullets and buckshot in him must be in very vigorous health to recover. Some hunters never miss a seal during the season, but if others get one out of four they wound they are doing well. (William Brennan.)

It is practically impossible to distinguish the age or sex of seals in the water while approaching them while at a reasonable gunshot distance from them, excepting in the case of old bulls. (Henry Brown.)

Use no discrimination, but kill all seal that come near the boat. The best way to shoot seal to secure them is to shoot them in the back of the head when they are asleep with their noses in the water. (Peter Brown.)

I can not distinguish male seals from female at a distance in the water, unless it be an old bull with a long wig. (Landis Callapa.)

I can not distinguish male seals from female in the water except in the case of an old bull, which is told by its size. Use no discrimination, but kill everything in the shape of a seal that comes near the boat. (Charles Campbell.)

There is no way of distinguishing the sex of fur seals (except large bulls) in the water at sea, nor do hunters ever make any effort to do so, but, on the contrary, kill all seals they can indiscriminately. (Vassili Chichinoff.)

Sex of the seal can not be told in the water unless it be an old bull. All seal are shot that come near the boat, regardless of sex. (Simeon Chin-koo-tin.)

It is impossible to distinguish the sex of the fur seal in the water at sea, and no effort was made to do so. We killed all fur seals indiscriminately. (Julius Christiansen.)

The sex of the seal can not be distinguished in the water. I shoot everything that comes near enough. (Peter Church.)

I am unable to tell a male seal from a female while in the water, unless it be an old bull with a long wig. (James Claplanboo.)

The sex can not be told in the water, and all are shot that come near the boat. No discrimination is used; hunters kill everything they see. (John C. Clement.)

In pelagic sealing no distinction is made by hunters as to the sex of the seals, the killing being done indiscriminately. It is not possible to distinguish between the male and female seals at sea, even if a hunter so desired, and this is the reason why pelagic sealing will soon result in the total extermination of the species. (M. Cohen.)

The hunters will kill any seals that come along, it being impossible to tell the sex in the water. (Peter Collins.)

All seal are killed that come near the canoe, whether it is male or female; I make no difference. In former years there were lots of seal, but now there are very few. Too many schooners hunting them all the time in the water, killing the mother seals as well as others. (Charlie Dahtlin.)

We tried to shoot them while asleep, but shot all that came in our way. (Alfred Dardean.)

Use no discrimination in killing seal, but shoot everything that comes near the boat in the shape of a seal. Hunters shoot seal in the most exposed part of the body. (George Dishow.)

I can not tell the sex of the seal in the water. (Peter Duffy.)

I never examine them to know whether they are male or female seal. I can not tell the difference in the water, and shoot everything without knowing whether they are male or female. (Echon.)

While there is some difference in the appearance of the female and old male seals, I do not think it would be possible for the hunters to tell that difference in the sea at any great distance. (M. C. Erskine.)

Everything in shape of seal that comes near the boat is killed. (Chief Frank.)

I can not tell the sex of a seal in the water; use no discrimination, but kill everything that comes near the boat. (Luke Frank.)

There is no way by which hunters can distinguish sex while the seals are in the water, nor do we aim to do so; the killing is always done in an indiscriminate way. (Thomas Frazer.)

I could not tell whether a seal was a male or female while it was in the water, unless it was an old bull. (William Frazer.)

There is no way that I know of to distinguish the sex of a seal when it is in the water. No attempt is made to discriminate the sex so as to kill only males. (F. F. Feeny.)

Can not distinguish the sex of seal in the water, but spear everything that comes near the boat, regardless of sex. (Chad. George.)

I have never examined the seal as to sex. I shoot everything that comes near the boat, and use no discrimination whatever. (Charles Gibson.)

I kill everything that comes near the boat, and use no discrimination, as the sex can not be told in the water, except it be an old bull, which is told by its size. (Gonastut.)

Can not distinguish sex of seal in the water. Hunters use no discrimination, and kill everything that comes near the boat. (James Gondowen.)

We have no way of distinguishing fur seals in the water at sea as to whether males or females, and do not try to do so, but kill all we can indiscriminately. (Nicoli Gregoroff.)

Every seal is shot that comes near the boat, regardless of sex; hunters use no discrimination. (James Griffin.)

Among all other fur seals at sea no distinction is possible, and none is attempted. The killing is indiscriminate, the object being to secure all the pelts possible. Bulls are, however, readily recognized at sea by their larger size and darker fur. (A. J. Gould.)

I always shoot everything that comes near the boat; can not tell the sex in the water. (Henry Haldane.)

I use no discrimination in sealing, but shoot everything that comes near the boat, regardless of sex. (Martin Hannon.)

I can't tell a male from a female while in the water at a distance. (James Harrison.)

My experience has been that the vessels employed in hunting seals shoot, indiscriminately, pups, male and female seals, regardless of age or sex; and even should sealers wish to discriminate in the killing it would not be possible for them to do so. My study of them in a long experience has not enabled me to positively distinguish the sex of a seal while in the water. It is the custom to pay seal hunters per skins taken; hence it is the object of the hunters to secure as many as possible, without reference to sex, age, or condition. While hunting they use small rowboats, with two or three men in each boat armed with shotgun and rifle, chiefly the former, and it would be simply impossible for the master or owners, even should they desire it, to supervise ten or a dozen hunters as to the killing of any particular sex or kind. (M. A. Healy.)

It is difficult to tell the sex of a seal which you shoot at in the water; but you can tell an old seal from a young seal. (William Hermann.)

It is impossible to distinguish positively between females and males (other than large bulls) in the water at sea, and no effort is made to do so. Full-powered bulls are readily recognized by their great bulk and darker fur. The killing of the fur seals is therefore absolutely indiscriminate, as the object is to secure all the skins possible, irrespective of sex, age, or condition. (Norman Hodgson.)

Hunters use no discrimination in shooting seal, but kill everything that comes near the boat. They could not discriminate if they wanted to, as the sex can not be told in the water. (O. Holm.)

Everything in the shape of a seal that comes near the boat is killed. (Jack Johnson.)

I am unable to distinguish a male seal from a female seal at a distance in the water. (Selwish Johnson.)

I shoot everything in the shape of a seal that comes near the boat, *and use no* discrimination. (Johnnie Johnson.)

The sex of the seal can not be told in the water unless in the case of an old bull, which is told by its size. We use no discrimination in shooting seal. Everything is killed that comes near the boat, regardless of sex. (Philip Kashevaroff.)

We can not tell the difference between a male and a female in the water, but kill everything that comes near the boat. (King Kaskwa.)

All killing of seals in the water must of necessity be indiscriminate slaughter, as it is impossible to tell the sex or the exact age of a seal until it has been taken into the boat, whereas on land careful discrimination can be made. (Francis R. King-Hall.)

Hunters use no discrimination in hunting seal, but shoot everything that comes near the boat. (Kinkooga.)

Hunters always kill all seal that come near the boat, regardless of sex. (C. Klananeck.)

I kill everything that comes near the canoe, regardless of sex. (Robert Kooko.)

I always kill every seal that comes near the boat; hunters use no discrimination. (John Kowineet.)

Have never killed but few old bulls in my life. The only seal that can be distinguished in the water is the old bull, which can be told by its size. Everything in shape of seal that comes near the boat is killed if possible, regardless of sex. (George Lacheek.)

We can not distinguish between the sexes of fur seals in the water at sea, nor do we try to. On the contrary, everything in sight is taken if possible, except large bulls, whose skins are worthless. (E. L. Lawson.)

It is impossible to distinguish between males and females of the fur-seal species in the water at sea, excepting large bulls, and no effort is made to do so. The object is to get all the marketable skins possible, and the killing is consequently indiscriminate. The pelts of large bulls, whose fur is coarse and of little value, and of yearlings of both sexes, whose skins are too small, not being strictly marketable skins, they were not taken. (James E. Lennan.)

Of late years most of the catches of Northwest skins are sold at a certain price per skin without particular examination. The dealers, knowing the location from which the skins are obtained, make an average price, and owners and hunters are, therefore, less particular than they were in former years as to the class of animals they capture. They kill everything they see without regard to age or sex, their only object being to swell the total number of the catch to the highest possible figure. (Isaac Liebes.)

But of course you could not tell when you shot a seal lying asleep whether it was a male or female. We shoot at all the seals when we get a chance, but it is only the ones that we find asleep that we catch. (Caleb Lindahl.)

It is impossible to distinguish the sex of fur seals at sea (excepting large bulls) and no effort is made to do so, the object being to secure all the skins possible; hence the killing is indiscriminate. (E. W. Littlejohn.)

It is impossible to tell the sex of a seal in the water. (William H. Long.)

Everything was killed that came near the boat; we did not use any discrimination. (George McAlpine.)

The sex can not be distinguished in the water unless it be the case of an old bull, which is distinguished by its size. Everything is killed in the shape of a seal that comes near the boat. (J. D. McDonald.)

When we find weather we are out in the boats killing all the seals we can get. We can not hunt in rough weather. (William McIsaac.)

Sex of seal can not be told in the water. We use no discrimination and kill all seal that come near the boat. Seal are not shot in any particular place; shoot them in the head if possible; if not, in the body. (James McKeen.)

It makes no difference if a seal is a male or female; we shoot everything that comes near enough. (Edward Maitland.)

I know it to be the custom of seal hunters to shoot seals at sea when they are at rest upon the surface of the water, and that those generally obtained are females, and constitute but a very small portion of those killed and lost. (John Malowansky.)

Everything that comes near the boat in shape of a seal is shot. I can not tell the sex of a seal till after it is dead. (Frederick Mason.)

We hunted with shotguns and shot them mostly when they were asleep on the water, or any chance we could get. I was a boat puller, and the hunters shot at everything in sight. (Henry Mason.)

We generally tried to kill them while asleep in the water, but fired at everything that came around us. (Thorwal Mathasan.)

I use no discrimination in shooting seals; shoot everything that comes near the boat, and all other hunters do the same. (G. E. Miner.)

Q. If awake, do you shoot them while breaching?—A. Yes, sir; we shoot at them anywhere, either while they are breaching or heads up, or any way. (Frank Moreau.)

We shot at everything in sight. We killed more females than males, and we lost a good many that we killed. (Eddie Morehead.)

Shoot everything that comes near the boat in shape of a seal, and use no discrimination. (Matthew Morris.)

The sex of the seal can not be told in the water. Hunters use no discrimination, but kill everything they can. (Nashtau.)

We shoot everything that comes near the canoe in shape of a seal, regardless of sex. The sex can not be told in the water unless it be an old bull. (Dan Nathlan.)

Everything is killed that comes near the canoe in shape of a seal. We can not tell a male from a female in the water. (Joseph Neishkaitk.)

I can not tell the age or sex of a seal in the water. (Niles Nelson.)

I can not tell the difference between a male and female seal in the water, and I shoot every seal that comes near the canoe. (Ntkla-ah.)

Sex can not be distinguished while the seals are in the water, nor do the hunters try to do so, for they kill everything they can shoot. (Nelson T. Oliver.)

I am unable to tell the sex of the seal while it is in the water, unless *it be an old bull* with a long wig. (Osly.)

It is impossible to distinguish the male seal from the female when they are in the water at a reasonable gunshot distance. (Charles Peterson.)

Yearlings are rarely taken in North Pacific. The age or sex of a seal in the water can not be distinguished, except that when close the apparent size is an indication of age. (W. Roberts.)

I use a shotgun to hunt for seal. Have lost very few seal, as I always shoot them near the boat. Everything in shape of a seal that comes near the boat is killed. I use no discrimination. (Rondtus.)

Everything in the shape of a seal that comes near the boat is shot. Hunters use no discrimination, but kill everything that puts its head above the water. (Abel Ryan.)

It is impossible to distinguish a male from a female seal in the water, except in the case of a very old bull, when his size distinguishes him. Therefore open-sea sealing is entirely indiscriminate as to sex or age. (L. G. Shepard.)

All seal are killed that come near the boat. I never stop to consider whether it is a male or female, but kill it off if I can. (Jack Shucky.)

Hunters use no discrimination, but shoot everything that comes near them. Their sex can not be told unless in the case of an old bull, which is distinguishable by its size. (Jack Sitka.)

The sex of the seal can not be told in the water. I kill everything that comes near my canoe in shape of a seal, and all other hunters do the same. (Thomas Skowl.)

Always shoot everything that comes near the boat in shape of a seal, regardless of sex. (George Skultka.)

Hunters use no discrimination, but shoot everything that come near the boat. (Fred Smith.)

It is impossible to distinguish between male and female seals at sea, even if the hunters so desired, except in the case of full-powered bulls, when they are readily recognized by their greatly superior size. Large bulls are rarely taken. No distinction is thought of by pelagic sealers, and the killing is done indiscriminately, the object being to secure as many skins as possible. (John W. Smith.)

I can not tell the sex of the seal in the water, unless he is an old bull. A hunter will blaze away at anything he sees in the water. (E. W. Soron.)

Hunters use no discrimination, but shoot everything in the shape of a seal that comes near the boat. (Joshua Stickland.)

All seals are killed that come near the boat, regardless of their sex. I never look to see whether I have killed a male or female seal until I have the seal dead in the boat. (M. Thlkahdaynahkee.)

Hunters use no discrimination in killing seal, but kill everything that comes near the boat, regardless of sex. (W. Thomas.)

The sex of the seal can not be told in the water when hunting. We use no discrimination, but kill everything in the shape of a seal that comes near the boat. (Charlie Tlaksatan.)

Hunters use no discrimination in taking seal, but kill everything that pokes its head out of the water near the boat. (John C. Tolman.)

The sex of the seal can not be told in the water. Hunters use no discrimination and everything in the shape of a seal that comes near the boat is killed. (Peter Trearsheit.)

Sex of seal can not be distinguished in the water, except in the case of an old bull, which can be told by its size. No discrimination is used in taking seal; everything that comes near the boat is shot at. (James Unatajim.)

I always shoot everything that comes near the boat, regardless of sex. We use no discrimination. (George Usher.)

Sex of seal can not be distinguished in the water. No discrimination is used in seal hunting; all are killed that come near. (Rudolph Walton.)

The sex of seal of same age can not be distinguished in the water. The only seal that can be distinguished is an old bull. We use no discrimination in seal hunting; everything is killed that comes near the boat. Pelagic hunters have become so plentiful and seals have become so wild that we are obliged to take long shots at them. (Charlie Wank.)

Our purpose and practice was to take all the seals we could get, regardless of their age or sex, without any discrimination whatever. (Michael White.)

Everything in the shape of seal that comes near the boat is shot. I can't tell the difference between a young cow and a male seal. (Fred Wilson.)

The seals are getting wild and hard to catch. There are a great many green hands in the business. We shot at everything that came along. We were getting 50 cents for every skin obtained. Our boats went 30 and 40 miles from the schooner. Sometimes they would leave in the morning at 5 and not return until the next day at 4 or 5 in the evening. (John Woodruff.)

The sex of seal can not be told in the water. No discrimination is used in seal hunting. All seal are killed that come near the boat. The only seal that can be distinguished in the water is an old bull. (Michael Wooskoot.)

I can not distinguish the sex of a seal in the water, but kill every seal that comes near the canoe, if possible. (Billy Yeltachy.)

I can not tell the sex of a seal in the water, and use no discrimination, but kill everything that comes near my canoe in the shape of a seal. (Hastings Yethnow.)

We use no discrimination in killing seal, but shoot everything that comes near the boat. What seals we have seen this year are very wild and hard to get at. The cause of their being wild is the indiscriminate shooting of them in the water. (Alf. Yohansen.)

I use no discrimination, and kill everything that comes near the boat in the shape of a seal. (Paul Young.)

I can not tell the difference between a male and a female in the water; use no discrimination, but kill everything that comes near the boat. (Walker Young.)

We fired at all the seals we could, regardless of their sex. We got one out of every six or seven we shot at or killed. (George Zammett.)

DESTRUCTION OF PREGNANT FEMALES.

We caught about 185 seals, mostly females in young, and we killed them while they were asleep on the water. (Charles Adair.)

Most of the seals killed by me have been females with pup. (Akatoo.)

We sealed along the coast and captured 154. Most all of them were pregnant females. (Charles Avery.)

Most all seals that I have killed were pregnant cows. Have taken a few male seals from 1 to 4 years old, I think. Have never killed an old bull. (Adam Ayonkee.)

Q. What percentage of the cows you have taken were with pup?—A. About 99 per cent of the cows taken were with pup. There may be one in a hundred that is either without pup or has had one. (George Ball.)

Most all the seals taken are females with pup. (Johnnie Baronvitch.)

Seventy-five per cent of the seal taken on the coast are cows with pup. (Martin Benson.)

We left Port Townsend in May and sealed south to Cape Flattery, and then went north along the coast until we came to Unimak Pass, and captured from 300 to 400 seals. Most all were females and had pups in them. I think fully two-thirds of all we caught were females, and a few were bulls. * * * We secured 500 skins along the coast, most all of which were pregnant females. (Bernhardt Bleidner.)

I have never killed any full-grown cows on the coast that did not have pups in them, and I have hunted all the way from the Columbia River to Barclay Sound. (Bowa-chup.)

We left Victoria about May, going north, and sealed all the way to Bering Sea. We had about 60 before entering Bering Sea, nearly all of which were females with young pups in them. (Thomas Bradley.)

Our last catch of seals on the coast were almost exclusively gravid females. (Henry Brown.)

We had 250 seals before entering the sea, the largest percentage of which were females, most of them having young pups in them. I saw some of the young pups taken out of them. (Thomas Brown.)

On my last sealing cruise this spring we caught five seals; two of them were females and had pups in them; three of them were young and smaller seals and had black whiskers. None but full-grown cows have white whiskers, but young cows and young bulls have black whiskers. About half of all the seals captured along the coast have white whiskers and are cows with pups in them. Most all full-grown cows that are caught have pups in them. Once, late in the season, I caught a full-grown barren cow with white whiskers. (Landis Callapa.)

Seventy-five per cent of seals shot in the North Pacific Ocean are females heavy with young. (John C. Cantwell.)

Most of the seals we killed going up the coast were females heavy with pup. I think nine out of every ten were females. (Charles Challall.)

Not quite half of all seals caught along the coast are cows with pups in them. About half are young seals, both male and female, and the

rest (a small number) are medium-sized males. We never get any old bulls worth speaking of, and we do not catch as many gray pups now as formerly. Have not caught any gray pups this year. Do not know what has become of them. Have never caught any full-grown cows without pups in them, and have never caught any cows in milk along the coast. (Charlie.)

Of those secured, the larger part by far were females, and the majority of these were pregnant cows. (Julius Christiansen.)

Most of the seals taken by me have been females with young. A few male seals have been taken by me, their ages ranging from 1 to 5 years old. Killed three large bulls during my life. (Peter Church.)

A great many years ago we used to catch about one-half cows and one-half young seals. I never caught any seals along the coast that had given birth to their young and that had milk in their breasts. I never captured any barren cows. * * * We secured ten seals in all, five of which had pups in them. I know this because I saw the pups when we cut the carcasses open. * * * The other five seals were smaller and probably male and female. (Circus Jim.)

About half the seals killed by me have been cows with pup. I never shot but two old bulls in my life. Have shot a few yearling seals. The young males I have killed were between 2 and 3 years old, I think. (William Clark.)

The seals we catch along the coast are nearly all pregnant females. It is seldom we capture an old bull, and what males we get are usually young ones. I have frequently seen cow seals cut open and the unborn pups cut out of them and they would live for several days. This is a frequent occurrence. (Christ Clausen.)

Q. What percentage of the cows you have taken were with pup?—A. About 70 per cent. (Peter Collins.)

The majority of seals taken are cows with pup; once in a while we take an old bull. A few yearlings are taken also. (Charlie Dahtlin.)

From 75 to 80 per cent of all the seals taken were mothers in young, and when cut open on deck we found the young within them. (James Dalgarduo.)

We had between 100 and 300 seals before entering the sea. Most all of them were females with pups in them. (John Dalton.)

Of the seals that were caught off the coast fully 90 out of every 100 had young pups in them. The boats would bring the seals killed on board the vessel and we would take the young pups out and skin them. If the pup is a good, nice one we would skin it and keep it for ourselves. I had eight such skins myself. Four out of five, if caught in May or June, would be alive when we cut them out of the mothers. One of them we kept for pretty nearly three weeks alive on deck by feeding it on condensed milk. One of the men finally killed it because it cried so pitifully. (Alfred Dardean.)

In all my experience in sealing on this coast I have killed but one cow seal that had milk in her breast, and that had given birth to her pup. I have killed a very few barren cows along the coast. Nearly all of the full-grown cows along the coast have pups in them. (Frank Davis.)

We sailed from San Francisco to Queen Charlotte Island, and caught

between 500 and 600 seals, nearly all females heavy with young. I have seen a young live pup taken out of its mother and kept alive for three or four days. We sealed from 10 to 120 miles off the coast. (Joseph Dennis.)

A large proportion of all seals taken are females with pup. A very few yearlings are taken. Never examine them as to sex. But very few old bulls are taken, but five being taken out of a total of 900 seals by my schooner. (George Dishow.)

We left Victoria the latter end of January, and went South to Cape Blanco, sealing around there two or three months, when we started north to Bering Sea, sealing all the way up. We had between 200 and 300 seals before entering the sea, a great many of them being females with pups in them. (Richard Dolan.)

The Indians left their homes in March and remained away until May. Their hunting lodges were on some small islands outside of Dundas Island. From what they tell me the majority of seals taken by them have been females with young. (William Duncan.)

We went north to Bering Sea, sealing all the way up, and got 110 seals before entering the sea. Most of them were cows, nearly all of which had pups in them. We took some of the pups alive out of the bodies of the females. (George Fairchild.)

Most all of the females taken are with young, or mothers. (F. F. Feeny.)

There were cow seals with pup among the seals that I have taken, but don't know how many. I have never taken an old bull in my life. (Chief Frank.)

I think the seals taken by me are about half females with pup, and the rest are 1 and 2 year old males and yearlings; never examined the yearlings as to sex. (Luke Frank.)

Q. What percentage of the cows you have taken were with pup?—A. All that are killed in the Pacific are with pup, and those that are killed in Bering Sea have been delivered of pups on the islands and are with milk. (Luther T. Franklin.)

Q. What percentage of the cows you have taken were with pup?—A. About 60 per cent were with pup. (Edward W. Funcke.)

Most all the seals taken by me were females with pup. Most of the seals killed in Bering Sea have been cows with milk. Have never taken a bull seal off the coast of Washington, but have taken a few farther north. A few young males are taken off the coast of Washington. (Chad George.)

I did not pay much attention to the sex of seals we killed in the North Pacific, but know that a great number of them were cows that had pups in them, and we killed most of them while they were asleep on the water. (Thomas Gibson.)

Most of the seals killed are cows with pup. A few males are killed, averaging from 1 to 4 years old. Have killed but one old bull in my life. A few yearlings are taken, the majority of which are females. (James Goudowen.)

We captured 63 seals, all of which were females, and all were pregnant. With regard to pregnancy, I may note that the seals taken off the coast of Vancouver Island were not so far advanced as those taken

farther north. * * * I am acquainted with the hunters and masters who sail from this port, and board all incoming and outgoing vessels of that class. These men all acknowledge that nearly all the seals taken off the Pacific Coast are females, and that they are nearly all with young. (E. M. Greenleaf.)

We began sealing off the northern coast of California and followed the sealing herd northward, capturing about 700 seals in the North Pacific Ocean, two-thirds of which were females with pup; the balance were young seals, both male and female. We captured between 900 and 1,000 on the coast, most all of which were females with pups. (Arthur Griffin.)

The catch was mostly females. Those we got in the North Pacific were females in pup, and those taken in Bering Sea were cows giving milk. (Joseph Grymes.)

Of the skins taken in this region fully nine-tenths are pregnant and milking females, but I never saw a young pup in the water. Large bulls were never taken, their skins being practically valueless. (A. J. Guild.)

Q. What percentage of the cows are taken with pups?—A. All the large ones have—all the grown ones have. Very seldom you find a barren one. (Charles H. Hagman.)

A large majority of seals taken are females with young. Only two old bulls were taken by me last year out of the 100 seals taken. But very few yearlings are taken. Paid no attention to sex. A few male seals are taken between 2 and 4 years old, I think. (Martin Hannon.)

Q. What percentage of the cows taken are with pups?—A. You can safely say about four-fifths of them. You get about 800 out of 1,000 seals. (H. Harmsen.)

I am told the white hunter kills mostly cow seals with pup. (Sam Hayikahtla.)

I have often conversed with masters, seamen, and hunters engaged in hunting the fur seals, and their statements to me have always been that the capture of a male seal was a rarity; that nearly all of their catch were cow seals heavy with young, or those who had given birth to their young on the islands and gone out to the fishing bank to feed, and that they lose a large proportion of those killed and wounded. (J. M. Hays.)

Q. What percentage of the cows you have taken were with pup?—A. At least 60 per cent were with pup. (William Henson.)

Of the seals secured in a season fully 70 per cent are females, and of these more than 60 per cent are pregnant and milking cows. The males taken are about equally divided in numbers between yearlings and bachelors from the ages of 2 to 5 years; bulls are seldom shot. (Norman Hodgson.)

Q. What percentage of the cows you have taken were with pup?—A. About the same amount (about 95 per cent) were with pup. (And. J. Hoffman.)

Most all seals taken are females with young. * * * A few male seal are taken. I would say they are generally 3 or 4 years old. A few yearlings are killed, mostly females. About five bull seal are killed out *of every hundred* taken. (E. Hofstad.)

About one-half of those caught along the coast were full-grown cows with pups in them; a few were medium-sized males, and the rest were younger seals of both sexes. I have never caught a full-grown cow in the straits or along the coast that did not have a pup in her. (Alfred Irving.)

Q. What percentage of the cows taken are with pup?—A. In the early part of the season, up to June, all the full-grown cows are with pup.

Q. Did you ever kill any cows whose young were born, and were giving milk?—A. That I don't remember taking notice of. I can not answer that question. (Gustave Isaacson.)

The female seals go through the passes from the Pacific Ocean into Bering Sea between June 25 and July 15. Females killed previous to this time I found with pups, but none with pups after that latter date. (Victor Jacobson.)

We began to seal when about 20 miles off Cape Flattery. We worked toward the northwest, and captured between 60 and 100 seals on the coast, about two-thirds of which were females with pup; the balance were yearlings consisting of male and female; after which we ran into Barclay Sound for supplies, from which place we worked to the northward toward Bering Sea. We captured about 80 seals while en route to the sea; about two-thirds of these were females with pup, the balance being yearlings about one-half male and one-half female. (James Jamieson.)

We began sealing off Barclay Sound, and caught three skins only, all of which were females with pup. * * * In hunting along the coast, I think about 80 per cent of those we caught were females, and most of them were carrying their young. We seldom caught any bulls, but caught a few of the younger males. I have seen the unborn young cut out of the mother seal and live for a week without food. We used to skin some, but threw most of them overboard. (James Jamieson.)

A majority of the seal taken on the coast are cows with pup. A few young males are taken, the ages ranging from 1 to 5 years. Once in awhile an old bull is taken in the North Pacific Ocean. (J. Johnson.)

Most of the seals taken are females with pup. Once in awhile an old bull is killed. (Jack Johnson.)

A large proportion of seals killed by me were cows with pup. Have killed a very few old bulls and some yearlings. (Johnnie Johntin.)

Most of the seal I have taken have been pregnant cows. But a very few young male seal are taken by me along the coast. (P. Kahiktday.)

The majority of seal are cows with pup. A few males are taken, about 4 or 5 years old. (Philip Kashevaroff.)

About half of the seals killed are females with pup. Have killed some yearling seals, but never killed any old bull. The young males I killed were between 2 and 3 years old. (Jim Kasooh.)

We caught somewhere about 500 seals before entering the sea, of all kinds. There were a good many females among them; there was a good many more of them than males, but the exact number I do not know. The old females had young pups in them. I saw them taken out and a good many of them skinned. (James Kean.)

We sailed from Victoria, British Columbia, and bore due north to Bering Sea. When we arrived there we had some 75 to 80 seals, the greater part of which were females, some of which had pups in them. (James Kennedy.)

Most of the seals taken by me were females with pup; have taken a few male seals from 1 to 4 years old. A very few yearlings have been killed by me, mostly females. (Mike Kethusduck.)

Those taken in Bering Sea were nearly all mother seals, in milk, that had left their young and were in search of food. (James Kiernan.)

Most all seals killed by me have been cows. * * * Have not killed a bull seal for three years. I have taken a few yearlings, mostly females. (John Kowineet.)

All the seals which I have seen killed were females, and the majority of these were pregnant cows. (Olaf Kvam.)

Most all seals that I have taken were cows with pup. A few male seals have been taken by me from 1 to 2 years old. (George Lacheek.)

A good many have pups in them, and when the boats come aboard loaded with seals, after they got through skinning them they would have a big pile of pups on deck. (James Laflin.)

We had a good catch, having taken 1,400 skins, more than 1,000 of which we secured on the coast. Of the latter more than 75 per cent were female pelts, and of these about 60 per cent were taken from pregnant cows. (James E. Lennan.)

I have often cut a seal open and found a live young one inside. (Caleb Lindahl.)

Of all the seals captured by me about one-half of them, I think, were cows with pups in them, and it is very seldom that I have ever caught a full-grown cow that was barren or did not have a pup in her; nor have I, in my long experience, caught a cow that was in milk, or that had recently given birth to her young. I seldom ever kill an old bull, for there are but very few of them that mingle with the herd along the coast. (James Lighthouse.)

In the year 1885 600 fur seals were caught during the month of March off the Farallon Islands (California). In subsequent years we have had to go farther north each year in order to secure a good spring catch. My experience has been that fully 90 per cent of all seals taken were females, and of these two-thirds were mothers in milk. (E. W. Littlejohn.)

I know that a large proportion of the seals taken were mothers in pup or mothers giving milk, but I paid no particular attention to the percentage. (William H. Long.)

On my last trip this year, when hunting seals off the cape, I caught 10 seals, 5 of which had pups in them; the rest of them were from 1 to 2 years old, part male and part female. I think that fully one-half of the seals caught along the coast are full-grown females with pups in them. We sometimes catch a few medium-sized males, the rest being younger ones, both male and female. (Thomas Lowe.)

Q. What percentage of the cows you have taken were with pup?—A. About 70 per cent, I should say. (Charles Lutjens.)

Most of the seals taken were females with pup. A few male seals were

killed, ages ranging from 1 to 5 years. One old bull was taken. (George McAlpine.)

Most of the seals taken by me have been females with pup. The female seals are easier killed than the male, and we aim to get them. A few yearlings have been killed by me, mostly females. (J. D. McDonald.)

Several of the females that we caught in the ocean were in pup, but the pup taken out of the belly was of no use for anything, and we would throw it overboard. (William McIsaac.)

We had 300 or 400 seals altogether before entering Bering Sea. They were most all females, which had young pups in them. (William McLaughlin.)

Q. What percentage of the cows taken are with pup?—A. The females are mostly all with pup—that is, up until the 1st of July. (Daniel McLean.)

We came down each year to the coast of Oregon, then went along up the coast to Bering Sea. I do not recollect the exact number of seals we caught in 1888, 1889, 1890, but last year we caught about 150 along the coast. I did not pay much attention to the sex of the seals, but I seen lots of little pups taken out of them. (Thomas Madden.)

We sailed up the coast and caught a few seals until we got to Bering Sea. We caught 1,100 seals, nearly all of which were caught in Bering Sea. We caught them around St. George Island. I think out of the 1,100 we caught there were 600 females. Out of that 600 there were over 400 that had pups inside of them, and we threw them all overboard. (James Maloy.)

About half of the seals killed by me, I think, were cows with pup. Have never killed an old bull, but have killed a few yearlings in my life. Never examined the latter as to sex. (Charles Martin.)

The biggest part of my year's catch off the coast were females with pups in them. (Patrick Marouey.)

In 1890 I went sealing in the schooner *Argonaut*. She sailed from Victoria about the 8th of April, and sealed along the coast up to the pass in Bering Sea. We caught about 250 seals that year. Most of the seals we caught in the North Pacific were females. A good many of them also had pups inside. (Henry Mason.)

I noticed in the seals that we caught along the coast that a great many of them were females and had pups. I think most of them were females. I know that in my boat the catch was most all females and they had pups in them. They were usually shot when sleeping on the water. (William Mason.)

We caught over 1,000 seals off the coast, almost all females, and a great number of them had pups in them. * * * Entered Bering Sea in July and was chased out by the cutters. Did not catch any seals in the American waters in Bering Sea, but went over across on the Russian side and sealed there. The whole catch for that year was about 1,500 seals. Those that we killed on the Russian side were about in the same proportion as to females as those killed on this side. (Thorwal Mathasan.)

Q. What percentage of the cows you have taken were with pup?—A. About 75 per cent were with pup. (Frank Moreau.)

Most all the seals killed by me have been females with pup. (Amos Mill.)

We began sealing off Cape Flattery; sailed and sealed to the northward, and captured about 800 seals along the coast. There were not over ten males in the whole lot. The females had pups in them, and we cut them out of their mothers and threw them overboard into the ocean. (John Morris.)

About half of the seals caught along the coast are cows with pups in them. A few medium-sized males are also taken, and the rest are young seals of both sexes. We scarcely ever see an old bull seal, nor can we tell the sex of the seals in the water. I have never caught any full-grown cows along the coast that did not have pups in them. (Moses.)

About half the seals taken by me are cows with pup. I have taken a few old bulls in my life, but not many. Have taken quite a number of yearlings. The male seals taken are between 2 and 3 years. (Nashtau.)

About one-half of the seals I have taken were females with pup. Have taken a very few yearlings. Once in a while I take an old bull, but not often. The male seals that I have killed are 2 and 3 years old, I think. (Dan Nathlan.)

Think about half of the seals taken by me have been cows with pup. The rest are yearlings and young males 2 and 3 years old. Have never seen an old bull in my life. (Joseph Neishkaitk.)

Almost every female that has arrived at the age of maturity is pregnant. We follow them on from there into Bering Sea, and almost all the females taken are pregnant. (Niles Nelson.)

We sailed south as far as Blanco, sealing around there for two or three months, when we headed north into Bering Sea, having caught 250 or 300 seals before entering the sea, of which 60 per cent of them were females, mostly all of them having pups in them. (John O'Brien.)

In the beginning of the season we killed mostly yearling seals, but as the season advanced we got almost all mothers in young in the vicinity of Cape Flattery or from the Columbia River to Vancouver. (Nelson T. Oliver.)

The catch along the coast for the last six or seven years, since the rifle and shotgun have come into use, is principally females, and the grown ones have pups in them. The catch of young seals is much less in proportion to the number caught than they were when Indians used to take them by spearing. (William Parker.)

We began sealing off Cape Flattery and sealed right up toward Bering Sea, capturing 16 seals along the coast, all of which were females with pup. We captured 250 females with pup on the coast and then returned to Victoria, after which we sailed again in a short time on the same vessel with the same crew for the North Pacific Ocean and Bering Sea, capturing about 250 female seals while en route to Bering Sea, also a few male yearlings. (Charles Peterson.)

My experience in four years' sealing is that nearly all the seals taken along the coast are pregnant females, and it is seldom that one of them is caught that has not a young pup in her. (Edwin P. Porter.)

I have been out sealing this year and caught 16 seals; 5 of them were *full-grown cows* that had pups in them. The rest were young seals

about 2 years old, both male and female, excepting one, and that was a gray pup. (Wilson Porter.)

Most of the seals taken by me have been cows with pup. (Rondtus.)

The majority of seals taken by me have been females with pup. Once in a great while I catch an old bull. A few yearlings have been taken and the majority of males are 2 and 3 year olds. (Abel Ryan.)

While cruising along the coast our principal catch was female seals with pup, the balance being principally yearlings, about half male and female. (William Short.)

We had 315 skins when we arrived here. Mostly all of them were females heavy with pup asleep on the water, and we killed them with shotguns. (Peter Simes.)

Most of the seal taken by me were cows with pup. (Aaron Simson.)

Most of the seals taken are cows with young. (Jack Sitka.)

Most of the seals taken by me are females with pup. Never killed but one old bull in my life. Have killed but a few yearlings and never looked to see if they were male or female. The young males killed by me were between 1 and 3 years old. (Thomas Skowl.)

I think 3 females with pup out of every 10 killed. I kill lots of yearlings, but never examined them as to sex. Never shoot any old bulls, although I have seen a good many. (George Skultka.)

We sailed from here on the *Flying Mist* on the 17th day of April, 1871, and caught altogether on that voyage about 875 seals, of which a large majority were either females with pups or with their breasts full of milk. I saw it flowing on the deck when we were skinning them. * * * Went to Okhotsk Sea and sealed there about two months. We got there some 500 seals, of which more than one-half were females, and the most of them had pups in them. (James Sloan.)

I am informed by our London sales agent, and believe, that nearly or quite nine-tenths of the Victoria catch is composed of females. (Leon Sloss.)

A very large majority of the seal taken in the North Pacific are cows with pup. (Fred Smith.)

We left San Francisco in February, and fished all the way up to Kadiak Island. We caught about 475 seals and about 40 otters. To the best of my judgment, the greatest portion of these were cows heavy with young. We could see the milk running out of their teats when they were skinned. I saw pups inside of the seals that we cut, and we saved some of them and fed them." (E. W. Soron.)

We left here with the *City of San Diego* in February, 1888, and arrived in Bering Sea in June, 1888. As soon as we got into the ocean we commenced shooting seals and continued shooting all the way up to the Aleutian Islands. The seals became more plentiful as we were going north. We caught about 650 during that voyage. We killed a portion in Bering Sea. We killed 1 large bull that I recollect, and the rest were nearly all females with pup, or mothers giving milk. (Cyrus Stephens.)

Most of the seals taken are females with pup. Out of 111 seals last year I killed but 3 bulls. A very few yearlings have been taken by me.

A few male seal have been taken by me from 2 to 4 years old. (Joshua Stickland.)

We commenced sealing as soon as we got outside of the cape, and captured about 270 seals along up the coast. Most of the seals caught were pregnant females, and when we would skin them the milk would run out of them on the deck. We began sealing off the Columbia River and then sealed northward up the coast to Bering Sea, and captured about 320 seals in the North Pacific Ocean, mostly all females, and nearly all had young pups in them. (John A. Swain.)

Most of the seals taken by me were cows with pup. * * * A few male seal have been taken from 1 to 4 years old. But very few old bulls have ever been taken by me. Have killed a few yearlings every year. (M. Thlkahdaynakkee.)

Most of the seals taken on this coast are cows with young. Quite a large number of yearlings are taken, most of which are females. (Charlie Tlaksatan.)

Most of the seal taken by me have been females with pup. A few male seals have been taken by me, ages ranging from 1 to 4 years, I should think. Some yearlings have been taken, a majority of which were females also. Very few old bulls have been killed by me. (James Unatajim.)

Most of the seals taken have been cows with pup. I have taken but a very few old bulls. I have killed plenty of young males, and have taken quite a number of yearlings, but never examined them as to sex. (George Usher.)

The majority of seal taken are cows. A few yearlings are killed, mostly females. (Rudolph Walton.)

In purchasing fur seals from hunters I have noticed that not less than 75 per cent of the catch taken previous to May 25 are female seals, and from the development of the teat on the skin were evidently females with pup. After that the catch is mostly young seals, and I paid no attention to the sex. (M. L. Washburn.)

Most of the seals captured along the coast are cows with pups in them. I have never captured any cows in milk or that had given birth to their young that year on the coast, and I do not recollect of ever having caught an old bull. (Watkins.)

Out of 50 seals taken so far this season 46 are females with pup and 4 are males. Only one yearling seal has been taken this season among the males. I should think the male seals taken this year were between 2 and 3 years old. (P. S. Weittenhiller.)

While out hunting this year we caught 16 seals; one-half of them were cows with pup, the remainder were yearlings and 2-year-olds of both sexes. (Charley White.)

In my captures off the coast between here and Sitka 90 per cent of my catch were females, but off the coast of Unimak Pass there was a somewhat smaller percentage of females, and nearly all the females were cows heavy with pup, and in some instances the time of delivery was so near at hand that I have frequently taken the live pup from the mother's womb. (Michael White.)

I think about one-half the seals killed by me have been females with pup, and the balance were divided up between yearlings and 1 and 2

year old males. Never examined the yearlings as to sex; have never killed an old bull in my life. (Billy Williams.)

Think that most of the seals I have taken were females with pup. Have also taken some 2 and 3 year old males and some yearlings. Never killed but one old bull in my life. (Fred Wilson.)

Most all the seals caught by me along the coast were cows that had pups in them. I never killed a barren cow or one that was in milk. (Wispoo.)

About half the seals I have killed were females with pup, and the balance were yearling seals and 2 and 3 year old males. Never killed an old bull in my life, nor have I ever seen one. (Billy Yeltachy.)

Some years ago there were more male seals taken than are taken now, but now about one-half are females with pup. The rest are yearling seals and 1 and 2 year old males. I have never examined the yearling seal to ascertain their sex. Have not killed any old bull seal for a number of years, but used to kill them. (Yethnow.)

Most of the seals I have killed were females with pup. Once in a while an old bull is taken. (Paul Young.)

I have been out on the Pacific Ocean this year seal hunting and caught three seals. They were large cow seals, and had pups in them. One and 2 year old seals are about equally male and female. (Hish Yulla.)

Almost half the seals I now catch are cow seals, and have little pups in them. (Hish Yulla.)

About one-third of all the cows I caught along the coast were cows with pups in them; never caught any old bulls, and used to catch more gray pups than I do now. Most all the rest of the seals I caught have been 1 and 2 years old, and are about equally male and female. (Thos. Zolnoks.)

OFFICE SPECIAL AGENT TREASURY DEPARTMENT,
Washington, D. C., December 30, 1892.

SIR: I have the honor to hand you herewith a series of tables setting forth the number of fur seals killed on the Pribilof Islands, for all causes whatsoever, during the term of the lease of the Alaska Commercial Company—that is, from 1870 to 1889, both inclusive.

These tables have been compiled by me with great care from the official records of the Pribilof Islands, and are correct, careful comparisons having been made. They include every seal killed from any cause, intentional or accidental, incident to the taking of seal skins on the islands of St. Paul and St. George.

JOSEPH MURRAY,
First Assistant Special Agent.

Hon. CHARLES FOSTER,
Secretary of the Treasury.

Tables showing in detail all killing of fur seals, for whatsoever purpose, on the Pribilof Islands during the term of the lease of the Alaska Commercial Company—that is, from 1870 to 1889, both inclusive.

NOTE.—There is a misapprehension in regard to the names of the several rookeries and hauling grounds, and they are often confounded by people who are not thoroughly acquainted with them. Zoltoi and Garbotch are local subdivisions of the Reef Rookery and are treated as rookeries by some of the Treasury agents, while others ignore them altogether. Zapadnie and Southwest Bay are one. Polivina and Halfway Point are one; some men using the Russian while others use the English names. English Bay and Middle Hill are separate and distinct rookeries, and yet they are often spoken of as though they were one. Near is a local subdivision of North Rookery. Little East is a subdivision of East Rookery. Sea Lion Rock, Southwest Point, and Rocky Point are neither rookeries nor hauling grounds in the strict sense of the term; the seals come and go at will, for it is only under the most favorable conditions of wind and water they can be reached, and it is but seldom there are many of them. By keeping these facts in mind it will be seen that seals were driven from all of the hauling grounds on both islands from 1870 to date.

ST. PAUL ISLAND.

[No record of daily killings for 1870.]

Date.	Rookery.	Total killed for all purposes.
1870	Not indicated in the records of this year	15,314
1871.		
May 16	Tolstoi	186
24	Reef	246
June 1	Tolstoi	579
2	Reef	222
6	do	917
8	English Bay	1,682
10	Southwest Bay	2,701
14	Zoltoi	874
15	Zoltoi and English Bay	1,167
16	Zoltoi	1,399
20	Southwest Bay	1,971
22	Lukannon	1,283
23	Zoltoi	518
24	Reef	796
24	Northeast Point	2,654
29	Zoltoi and Reef	1,014
28	Tolstoi and English Bay	2,401
July 1	Lukannon	1,133
3	Northeast Point	2,038
6	Lukannon and Zoltoi	3,623
7	Reef	1,189
8	Lukannon	756
18	Zoltoi	1,040
21	English Bay	1,940
22	Ketova	801
22	Northeast Point	3,404
24	Zoltoi	1,179
26	Zoltoi and Lukannon	1,807
28	Tolstoi	1,418
28	Northeast Point	2,845
31	Lukannon	657
Aug. 11	Zoltoi	205
18	do	150
24	do	118
29	Ketova	60
Sept. 4	Lukannon	193
11	Zoltoi	178
18	Ketova	105
26	do	77
29	Tolstoi	130
Oct. 2	Ketova	1,250
9	Halfway Point	1,308
10	Ketova	5,083
13	Tolstoi	896
14	Reef	506
16	Northeast Point	633
17	Ketova	683
17	Reef	1,158
19	Tolstoi	3,150
21	English Bay	3,666
21	Northeast Point	2,181
25	do	2,142
27	do	3,042
28	do	679
28	do	495
1871.		
Oct. 30	Tolstoi	2,992
31	English Bay	30
Nov. 7	Reef	729
Dec. 19	do	647
19	do	3,877
	Total	81,803
1872.		
May 11	Northeast Point	5
14	Reef	227
24	do	455
June 1	do	759
3	Tolstoi	278
5	Reef	293
10	Tolstoi and English Bay	209
11	Southwest Bay	1,616
12	Zoltoi and Reef	662
13	Tolstoi and English Bay	1,057
14	do	1,730
15	Reef and Northeast Point	4,714
17	Zoltoi	395
19	English Bay	2,828
20	Reef	1,169
21	Lukannon	1,705
22	Northeast Point and Ketova	5,547
24	Reef and Zoltoi	910
27	English Bay	4,618
28	Tolstoi and Northeast Point	6,427
29	Ketova and Lukannon	1,151
July 1	Zoltoi	1,841
5	English Bay	3,265
6	Zoltoi and Northeast Point	6,765
9	English Bay	3,139
12	Zoltoi and Lukannon	2,071
13	English Bay	2,329
16	Zoltoi	1,116
17	Halfway Point	1,664
19	English Bay, Lukannon, and Northeast Point	7,388
22	Zoltoi	1,384
24	English Bay	2,080
25	Zoltoi	638
30	do	34
Aug. 1	Northeast Point	10
6	Zoltoi	119
9	Northeast Point	7
13	Tolstoi	90
17	Northeast Point	3
20	Zoltoi	114
29	Lukannon	161
Sept. 7	Zoltoi	99
12	do	122
20	do	118
Oct. 3	English Bay	93
3	Zoltoi	490
10	do	127
21	Ketova	91

Tables showing in detail all killing of fur seals, for whatsoever purpose, on the Pribilof Islands during the term of the lease of the Alaska Commercial Company—that is, from 1870 to 1889, both inclusive—Continued.

ST. PAUL ISLAND—Continued.

Date.	Rookery.	Total killed for all purposes.
1872.		
Oct. 29	Zoltoi, Reef, and Lukannon	1,284
Nov. 29	Tolstoi	753
30	Northeast Point	724
30	....do	1,286
Dec. 5	Reef	112
6	Zoltoi	426
Nov. —		5,121
	Total	81,819
1873.		
May 23	Reef	193
23	Southwest Bay	104
June 3	Reef and Tolstoi	803
4	Southwest Bay	703
6	Reef and Tolstoi	920
10	Southwest Bay and English Bay	2,597
11	Reef and Zoltoi	1,666
13	Tolstoi and English Bay	2,029
13	Northeast Point	3,243
16	Tolstoi	1,770
16	Lukannon	677
16	Reef	465
18	Southwest Bay and English Bay	3,946
21	Zoltoi	652
21	Northeast Point	3,412
23	Tolstoi and English Bay	1,803
24	English Bay	3,159
26	Reef and Tolstoi	2,210
27	Zoltoi and Lukannon	1,147
27	Northeast Point	5,020
30	Tolstoi	1,848
July 1	Lukannon and Zoltoi	2,337
2	Tolstoi	1,938
3	Zoltoi	2,212
5	....do	710
8	Zoltoi and Tolstoi	1,510
9	....do	2,494
9	Northeast Point	6,278
14	Tolstoi	925
15	Zoltoi	1,248
16	....do	1,547
17	English Bay	1,561
18	Zoltoi	929
19	Lukannon, Ketova, and Zoltoi	1,047
19	Northeast Point	5,696
21	English Bay	754
22	Lukannon and Ketova	1,979
22	....do	446
24	Northeast Point	2,727
Aug. 4	Zoltoi	179
13	....do	168
20	....do	95
20	Lukannon	155
Sept. 1	Zoltoi	119
9	....do	109
29	....do	122
30	Southwest Bay	10
Oct. 8	Ketova	104
16	....do	80
21	Zoltoi	154
Nov. —	For natives' food	5,489
Dec. 9	Reef	231
30	Garbotch	267
	Total	81,987
1874.		
Apr. 27	Northeast Point	10
May 6	Southwest Bay	404
19	Reef	340
25	....do	301
30	....do	217
1874.		
June 3	Southwest Bay	2,395
3	Reef	538
4	Tolstoi and English Bay	556
6	Northeast Point	4,062
8	Reef and Zoltoi	639
9	Southwest Bay and English Bay	1,898
10	Tolstoi	634
11	Reef and Garbotch	540
13	Southwest Bay and English Bay	1,982
13	Tolstoi	622
13	Northeast Point	4,737
15	Reef and Zoltoi	891
17	English Bay and Tolstoi	2,689
17	Zoltoi	474
19	Southwest and English bays	3,419
20	Zoltoi and Lukannon	3,033
20	Northeast Point	7,217
23	Zoltoi and Lukannon	3,982
25	English Bay	3,270
26	Reef and Zoltoi	1,921
27	Ketova and Lukannon	1,321
27	Northeast Point	8,172
30	Zoltoi and Tolstoi	1,212
July 1	English Bay and Tolstoi	2,209
3	Reef, Tolstoi, and Lukannon	2,621
3	Tolstoi	1,538
4	Lukannon	538
4	Zoltoi	3,014
6	English Bay	1,564
8	English Bay and Tolstoi	2,702
9	Zoltoi	1,987
9	Tolstoi and Lukannon	1,580
10	Zoltoi	432
10	Northeast Point	3,367
13	Tolstoi and Lukannon	1,664
14	English Bay	2,169
15	Zoltoi	475
16	Lukannon and Ketova	1,099
16	Zoltoi	668
17	Lukannon	533
17	Northeast Point	4,004
23	Tolstoi	130
28	Zoltoi	167
Aug. 3	....do	112
10	....do	107
17	....do	131
26	....do	89
31	....do	201
Sept. 7	....do	197
16	....do	163
25	....do	174
Oct. 1	....do	179
19	Reef	175
29	....do	236
Nov. —	Pups for natives	4,897
Dec. 17	Reef	1,541
	Total	98,139
1875.		
Jan. 1	Northeast Point	25
Feb. 10	....do	6
16	....do	9
17	....do	16
May 7	Southwest Bay	498
10	Northeast Point	9
14	....do	20
18	Reef	143
24	....do	657
31	....do	492
June 1	English Bay and Southwest Bay	1,201
1	Tolstoi	203
5	Zoltoi and Tolstoi	692

Tables showing in detail all killing of fur seals, for whatsoever purpose, on the Pribil Islands during the term of the lease of the Alaska Commercial Company—that is, fro 1870 to 1889, both inclusive—Continued.

ST. PAUL ISLAND—Continued.

Date.	Rookery.	Total killed for all purposes.
1875.		
June 7	Zoltoi and Reef	711
7	Southwest Bay	1,560
7	Northeast Point	27
10	English Bay, Southwest Bay, Tolstoi	1,456
12	Reef and Zoltoi	631
12	Northeast Point	4,065
14	Tolstoi and English Bay	739
16	Halfway Point	2,115
16	Tolstoi and reef	707
17	Lukannon	452
18	Southwest Bay, English Bay	3,303
19	Zoltoi	1,363
19	Northeast Point	5,252
22	Tolstoi	1,830
22	Zoltoi	1,150
24	English Bay	3,009
25	Lukannon	262
26	Northeast Point	7,349
26	Southwest Bay	4,047
28	Reef	1,527
30	Zoltoi and English Bay	3,927
July 2	Lukannon, Ketova, Zoltoi	2,534
3	Northeast Point	5,024
6	Zoltoi and Lukannon	1,248
8	English Bay	3,370
9	Tolstoi and English Bay	2,093
10	Lukannon and Ketova	1,125
10	Northeast Point	5,937
13	Zoltoi	1,565
14	Tolstoi and English Bay	1,810
15	Lukannon and Ketova	748
16	English Bay	2,700
16	Zoltoi	1,205
17	Northeast Point	7,439
22	Zoltoi	557
28	.....do	159
Aug. 4	.....do	235
14	Ketova	192
21	Zoltoi	159
Sept. 2	.....do	210
12	.....do	143
21	.....do	146
30	.....do	153
Oct. 12	.....do	115
Nov. 5	.....do	172
17	Tolstoi	1,990
29	Southwest Bay	24
	Pups killed for food	3,745
Dec. 2	Northeast Point	15
4	Tolstoi	694
	Total	94,960
1876.		
Jan. 12	Tolstoi	914
May 23	Southwest Bay	223
31	Reef	189
June 3	Southwest Bay	836
6	Reef and Zoltoi	673
7	Tolstoi	468
8	Southwest Bay	566
10	Zoltoi	184
11	Northeast Point	1,585
13	Zoltoi	868
14	Halfway Point	811
15	Tolstoi, Zoltoi, Reef	1,509
17	Southwest Bay	2,641
17	Northeast Point	3,120
20	Zoltoi	2,942
21	Tolstoi	3,161
22	Zoltoi	480
24	English Bay and Northeast Point	10,696
1876.		
June 26	Zoltoi	[illegible]
28	English Hill	3,[illegible]
29	Zoltoi	1,[illegible]
July 1	Tolstoi and Northeast Point	11,[illegible]
4	Tolstoi and Ketova	2,[illegible]
5	.....do	2,[illegible]
7	English Bay	2,[illegible]
8	Lukannon	2,[illegible]
8	Northeast Point	2,[illegible]
10	Zoltoi	2,[illegible]
13	English Hill	1,[illegible]
22	Zoltoi	[illegible]
29	.....do	1,[illegible]
Aug. 1	Lukannon and Zoltoi	3,[illegible]
10	Zoltoi	[illegible]
17	Ketova	[illegible]
23	.....do	[illegible]
Sept. 1	Zoltoi	[illegible]
11	Ketova	[illegible]
19	Zoltoi	[illegible]
28	.....do	[illegible]
Oct. 6	.....do	[illegible]
14	.....do	[illegible]
18	.....do	[illegible]
31	Tolstoi	[illegible]
Nov. 24	Southwest Bay	[illegible]
24	.....do	[illegible]
	Pups killed for food	3,[illegible]
Dec. 15	Tolstoi	[illegible]
	Total	83,[illegible]
1877.		
May 22	Reef	[illegible]
June 4	.....do	[illegible]
5	Southwest and English Bay	[illegible]
9	.....do	1,[illegible]
12	Reef	[illegible]
13	Halfway Point	1,[illegible]
14	English Bay and Southwest Bay	1,[illegible]
15	Tolstoi	1,[illegible]
16	Zoltoi	1,[illegible]
18	.....do	1,[illegible]
19	Tolstoi	1,[illegible]
20	Southwest Bay	1,[illegible]
21	Lukannon	1,[illegible]
22	Halfway Point	1,[illegible]
23	Northeast Point	5,[illegible]
23	Tolstoi	1,[illegible]
25	Zoltoi	1,[illegible]
26	Halfway Point	[illegible]
27	Tolstoi	2,[illegible]
28	Zoltoi and Lukannon	1,[illegible]
29	English Bay	2,[illegible]
30	Tolstoi	1,[illegible]
30	Northeast Point	6,[illegible]
July 1	Zoltoi	1,[illegible]
3	Tolstoi and Lukannon	1,[illegible]
4	Tolstoi and English Bay	2,[illegible]
6	Lukannon and Ketova	2,[illegible]
7	Zoltoi	1,[illegible]
7	Northeast Point	5,[illegible]
9	Zoltoi	[illegible]
10	Tolstoi	2,[illegible]
10	Northeast Point	2,[illegible]
14	Zoltoi	1,[illegible]
22	.....do	[illegible]
Aug. 6	.....do	[illegible]
11	.....do	[illegible]
20	.....do	[illegible]
30	.....do	[illegible]
Sept. 12	.....do	[illegible]
21	.....do	[illegible]
29	.....do	[illegible]

Tables showing in detail all killing of fur seals, for whatsoever purpose, on the Pribilof Islands during the term of the lease of the Alaska Commercial Company—that is, from 1870 to 1889, both inclusive—Continued.

ST. PAUL ISLAND—Continued.

Date.	Rookery.	Total killed for all purposes.
1877.		
Oct. 6	Zoltoi	171
16	do	157
24	do	146
Nov. 7	Zoltoi and Ketova	2,715
9	Zoltoi and Lukannon	1,535
12	Zoltoi and Reef	757
19	Tolstoi	222
27	do	1,259
29	do	383
Dec. 20	Northeast Point	20
	Total	67,810
1878.		
May 19	Sea Lion Rock	206
30	Southwest Bay	703
June 8	Reef	857
11	Tolstoi and English Bay	2,409
12	Reef and Zoltoi	556
13	Southwest Bay and English Bay	1,099
14	Tolstoi	887
15	Ketova, Reef, Zoltoi	1,283
17	Tolstoi	1,501
18	Southwest Bay and English Bay	2,278
19	Lukannon, Ketova, Zoltoi	998
20	Tolstoi	1,731
21	Southwest Bay and English Bay	1,457
22	Zoltoi, Lukannon, Ketova	1,309
22	Northeast Point	5,900
24	Halfway Point	1,473
25	Tolstoi	1,552
26	Zoltoi, Ketova, Lukannon	1,896
27	English Bay	2,672
28	Zoltoi and Ketova	1,661
29	Tolstoi	1,131
29	Northeast Point	6,375
July 1	Halfway Point	2,237
2	Zoltoi and Ketova	3,903
3	Lukannon	791
4	Zoltoi	2,010
5	Tolstoi	2,622
6	Zoltoi and Ketova	1,076
6	Northeast Point	7,231
8	Halfway Point, Lukannon, Ketova	1,369
9	Zoltoi	916
10	do	2,288
10	Northeast Point	3,322
12	Tolstoi and Middle Hill	3,600
13	Zoltoi	2,101
16	Middle Hill	1,986
17	Zoltoi	2,337
18	do	1,549
18	Lukannon	272
20	Zoltoi	404
Aug. 10	do	294
22	do	173
Sept. 2	do	211
14	do	156
24	Lukannon	144
Oct. 2	do	148
10	do	149
Nov. 1	do	1,380
4	do	2,000
6	Reef	1,255
8	do	571
26	Tolstoi and Reef	1,144
28	do	853
Aug. to Dec.	Northeast Point (watchmen)	133
	Total	88,519
1879.		
May 19	Southwest and English bays	278
26	Reef	525
June 2	do	162
7	English and Southwest bays, Tolstoi	1,627
9	Reef	424
10	Halfway Point	1,188
11	Southwest and English bays	1,462
12	Tolstoi	498
13	Reef, Zoltoi, Ketova	730
14	Southwest Bay and Middle Hill	997
16	Halfway Point	522
17	Southwest Bay and Middle Hill	1,331
18	Reef, Ketova, Zoltoi	914
19	Southwest Bay and English Bay	1,110
20	Tolstoi and Middle Hill	1,176
21	Reef, Ketova, Lukannon	1,053
16	Northeast Point	1,528
17	do	966
18	do	1,860
19	do	1,745
20	do	1,289
23	Tolstoi and Middle Hill	2,300
24	Southwest and English bays	1,822
25	Reef, Zoltoi, Ketova	1,995
26	Tolstoi, Middle Hill, English Bay, Zoltoi	1,542
27	Halfway Point	1,940
28	Ketova, Reef, Lukannon, Zoltoi	1,206
23	Northeast Point	1,550
24	do	1,414
25	do	1,339
26	do	1,074
27	do	1,665
30	Tolstoi and Middle Hill	2,617
July 1	English Bay	2,148
2	Lukannon and Zoltoi	1,885
3	Zoltoi and Middle Hill	1,932
4	English Bay	2,106
5	Lukannon and Ketova	1,168
June 30	Northeast Point	2,524
1	do	1,628
2	do	866
3	do	1,988
July 4	do	2,077
7	Zoltoi and Middle Hill	1,528
8	Zoltoi, Ketova, Lukannon	1,920
9	Zoltoi and Ketova	983
10	do	948
7	Northeast Point	2,418
8	do	1,264
9	do	1,519
10	do	398
14	Zoltoi	2,652
15	Zoltoi and Ketova	1,233
16	Middle Hill, Lukannon, Tolstoi	2,882
16	do	157
25	Zoltoi	278
Aug. 2	Northeast Point	13
2	Zoltoi	273
11	do	195
20	do	206
27	Specimens	18
28	Zoltoi	203
Sept. 5	Southwest Bay	1
8	Zoltoi	184
9	Northeast Point	16
18	Zoltoi	174
18	Halfway Point	2
18	Southwest Bay	5
18	Northeast Point	4
29	Zoltoi	196
29	Southwest Bay	6
29	Northeast Point	7
Oct. 7	Ketova	[illegible]

Tables showing in detail all killing of fur seals, for whatsoever purpose, on the Pribilof Islands during the term of the lease of the Alaska Commercial Company—that is, from 1870 to 1889, both inclusive—Continued.

ST. PAUL ISLAND—Continued.

Date.	Rookery.	Total killed for all purposes.
1879.		
Oct. 20	Lukannon	263
29	do	544
30	do	335
31	Ketova	999
31	do	107
Nov. 3	Lukannon	1,153
3	do	31
5	Garbotch	1,466
5	do	79
10	do	356
13	Reef	260
27	do	172
Dec. 6	Garbotch	1,206
10	Reef	1,308
26	Northeast Point	62
26	Southwest Bay	5
	Total	88,221
1880.		
May 14	Southwest Bay	209
22	Reef	225
22	Northeast Point	19
June 1	Reef	216
8	Southwest Bay	1,497
9	Reef	926
11	English Bay, Tolstoi	889
12	Southwest and English bays	763
14	Halfway Point	1,204
15	Reef and Zoltoi	765
16	Zapadnie and English Bay	990
17	Ketova, Zoltoi, Reef	18
18	Tolstoi and English Bay	1,619
19	English Bay and Middle Hill	802
14, 19	Northeast Point	5,279
21	Halfway Point	1,459
22	Ketova, Zoltoi, Reef	1,035
23	Tolstoi and Middle Hill	1,702
24	Reef, Zoltoi, Ketova	1,437
25	English Bay and Middle Hill	2,582
26	Ketova, Zoltoi, Reef	1,062
21, 26	Northeast Point	6,202
28	Halfway Point	1,516
29	Ketova, Lukannon, Zoltoi	1,743
30	Tolstoi and Middle Hill	2,297
July 1	do	1,622
2	English Bay and Middle Hill	2,374
3	Ketova, Zoltoi, Reef	1,386
3	Northeast Point	7,167
5	Halfway Point	789
5	Lukannon and Ketova	651
6	Tolstoi	1,577
7	Tolstoi and Lukannon	1,654
8	Zoltoi, Reef, Lukannon, Ketova	2,221
9	Tolstoi, Lukannon, Middle Hill	1,428
10	Zoltoi, Ketova, Lukannon	1,221
5–10	Northeast Point	7,073
12	Zoltoi, Ketova, Lukannon	817
13	Tolstoi and English Bay	1,763
14	Reef, Zoltoi, Lukannon, Ketova	2,640
15	English Bay	1,834
16	Middle Hill and Lukannon	2,461
17	Zoltoi	534
28	Northeast Point	43
30	Halfway Point	228
31	Zoltoi	218
Aug. 11	do	253
19	do	160
28	do	189
Sept. 8	do	195
18	do	239
20	do	227
1880.		
Oct. 12	Lukannon	260
25	English Bay	193
Nov. 2, 3, 5, 6	Lukannon, Reef, Ketova	4,410
Dec. 6	Reef	1,176
9	Southwest Bay	13
24	Northeast Point	82
Nov. 11	Middle Hill	270
29	English Bay	270
	Total	84,779
1881.		
Jan. 1–3	Tolstoi and reef	1,058
May 4	Additional skins found on recount	8
14	Additional skins found in salt	3
29	Reef	165
June 6	Reef and Zoltoi	423
7	Southwest and English bays, Tolstoi	1,250
9	Zoltoi	127
10	Halfway Point	474
14	Zoltoi	196
15	Southwest and English bays, Tolstoi	2,387
16	Zoltoi, Reef, Lukannon	724
17	Halfway Point	539
18	Tolstoi	1,229
20	Zoltoi and Lukannon	1,614
21	Tolstoi, Middle Hill, Northeast Point	4,103
22	English Bay, Middle Hill, Tolstoi, Northeast Point	3,649
23	Reef and Tolstoi	1,164
24	Halfway Point, Middle Hill, English Bay, Tolstoi	3,082
25	Middle Hill, Lukannon, Zoltoi, Reef	1,275
27	Middle Hill, English Bay, Tolstoi, Northeast Point	2,043
28	English Bay, Southwest Bay, Northeast Point	3,318
29	Lukannon, Zoltoi, Northeast Point	2,967
30	English Bay, Middle Hill, Northeast Point	4,596
July 1	Tolstoi and Lukannon	3,358
2	Halfway Point	943
4	English Bay, Middle Hill, Tolstoi, Northeast Point	3,758
5	Zoltoi, Ketova, Northeast Point	1,949
6	Southwest Bay, English Bay, Northeast Point	4,853
7	Zoltoi, Tolstoi, Middle Hill, Northeast Point	3,421
8	Halfway Point, Northeast Point	2,269
9	English Bay, Middle Hill, Tolstoi	2,631
12	Zoltoi, Tolstoi, Lukannon	3,075
13	English Bay, Middle Hill	1,782
14	English and Southwest bays	1,473
15	English Bay, Middle Hill, Tolstoi, Zoltoi Ketova, Lukannon	3,561
16	Zoltoi, Ketova (711), Northeast Point, food (16)	727
18	Middle Hill, Tolstoi, Zoltoi, Ketova, Lukannon	2,455
19	English Bay, Middle Hill, Tolstoi	2,301
20	Tolstoi, Zoltoi, Ketova, Lukannon	3,536

Tables showing in detail all killing of fur seals, for whatsoever purpose, on the Pribilof Islands during the term of the lease of the Alaska Commercial Company—that is, from 1870 to 1889, both inclusive—Continued.

ST. PAUL ISLAND—Continued.

Date.	Rookery.	Total killed for all purposes.
1881.		
July 27	Zoltoi	202
18-29	Northeast Point	38
Aug. 5	Zoltoi	224
16	....do	276
17	Northeast Point	10
20	....do	6
26	Zoltoi	240
29	Northeast Point	7
Sept. 6	Zoltoi	249
17	Northeast Point	11
19	Zoltoi	205
28	Zoltoi (208), Northeast Point (5)	213
Oct. 10	Zoltoi (211), Northeast Point (5)	216
25	Zoltoi, Northeast Point	227
Nov. 5	Tolstoi	209
16	Middle Hill	683
17	Tolstoi	494
21	Middle Hill	462
Dec. 7	Southwest Bay	1,022
9	Reef	1,294
	Total	83,774
1882.		
Jan. 12	Reef	80
Feb. 8	....do	103
10	....do	8
May 22	Tolstoi	126
31	Reef	246
June 2	Southwest Bay, Middle Hill, Tolstoi	400
7	Southwest Bay	849
8	Zoltoi and Reef	428
10	Tolstoi and Reef	488
12	Southwest Bay and Northeast Point	2,223
13	Halfway Point	217
13	Northeast Point	866
14	Southwest Bay and Tolstoi	803
16	Halfway Point, Reef, Tolstoi	1,458
17	Southwest Bay and Tolstoi	1,070
19	Ketova, Reef, Zoltoi, Northeast Point	1,829
20	Southwest Bay and Northeast Point	3,069
21	English Bay, Tolstoi, Northeast Point	1,617
22	Ketova, Reef, Zoltoi, Northeast Point	2,811
23	Halfway Point and Northeast Point	2,528
24	Middle Hill, Tolstoi, Northeast Point	1,560
26	Southwest Bay and Northeast Point	3,164
27	English Bay, Middle Hill, Northeast Point	3,226
28	Reef, Tolstoi, Northeast Point	4,270
29	Middle Hill, Tolstoi, Northeast Point	2,239
30	Halfway Point, Lukannon, Northeast Point	2,469
July 1	Northeast Point and Reef	1,601
3	Southwest Bay and Northeast Point	3,805
4	English Bay, Middle Hill, Northeast Point	2,575
5	Zoltoi and Northeast Point	3,034
6	Middle Hill, Zoltoi, Northeast Point	1,540
7	English Bay, Middle Hill, Northeast Point	2,673
1882.		
July 8	Halfway Point and Northeast Point	2,454
10	Reef, Ketova, Lukannon, Northeast Point	3,291
12	....do	2,833
13	Southwest Bay and Northeast Point	3,420
14	English Bay, Middle Hill, Tolstoi, Northeast Point	3,087
17	English Bay, Middle Hill, Northeast Point	2,593
18	Zoltoi	1,012
19	Zoltoi, Lukannon, Ketova	1,276
20	Southwest Bay	727
25	Zoltoi	204
27	Northeast Point	19
Aug. 4	Zoltoi	252
14	....do	226
26	....do	234
Sept. 4	....do	191
15	....do	237
27	....do	227
30	Northeast Point	25
Oct. 6	Zoltoi	201
17	....do	261
30	Reef	166
30	Northeast Point	23
Nov. 17	Middle Hill and Tolstoi	248
28	Reef	383
30	Tolstoi	429
Dec. 4	Reef	498
6	....do	388
12	....do	400
	Total	79,834
1883.		
May 26	Southwest Bay	230
June 4	Southwest and English bays, Tolstoi	592
6	Halfway Point	354
9	Reef	177
11	Southwest Bay, Middle Hill, Tolstoi	405
12	Reef and Zoltoi	352
13	Halfway Point	252
14	Southwest and English bays	490
15	English Bay and Tolstoi	440
16	Reef and Zoltoi	341
18	Southwest Bay	417
19	English Bay, Middle Hill, Tolstoi	735
20	Halfway Point and Lukannon	908
27	Reef and Tolstoi	972
22	English Bay, Middle Hill, Tolstoi	1,401
23	Reef, Zoltoi, Lukannon	1,078
18-23	Northeast Point	3,279
25	English Bay, Middle Hill, Tolstoi	1,428
26	Zoltoi and Lukannon	838
27	Southwest and English bays	1,640
28	Zoltoi, Tolstoi, Reef, Lukannon	1,612
29	English Bay, Middle Hill, Zoltoi	1,519
30	Lukannon, Reef, Zoltoi	1,191
25-30	Northeast Point	5,012
July 2	Halfway Point	1,700
3	Southwest Bay	2,151
4	Middle Hill and Tolstoi	1,494
5	Zoltoi and Lukannon	2,346
6	Zoltoi, Middle Hill, Tolstoi	1,755

Tables showing in detail all killing of fur seals, for whatsoever purpose, on the Pribilof Islands during the term of the lease of the Alaska Commercial Company—that is, from 1870 to 1889, both inclusive—Continued.

ST. PAUL ISLAND—Continued.

Date.	Rookery.	Total killed for all purposes.
1883.		
July 7	Zoltoi, Reef, Lukannon	939
8	Middle Hill	1,164
2-9	Northeast Point	5,066
10	English Bay, Middle Hill, Tolstoi, Zoltoi	1,923
12	Halfway Point, Lukannon, Zoltoi	1,659
13	Southwest Bay	2,444
14	English Bay, Middle Hill, Zoltoi	2,136
16	.....do	2,060
17	Halfway Point and Zoltoi	1,116
18	Southwest Bay	1,876
19	Middle Hill, Lukannon, Zoltoi	8,183
Aug. 1	Zoltoi	191
10	.....do	250
20	.....do	102
Sept. 1	.....do	278
12	.....do	123
24	.....do	286
Oct. 6	.....do	200
20	.....do	200
29	Reef	1,562
Nov. 1	Ketova	336
2	Reef	884
5	.....do	119
15	.....do	134
26	.....do	155
27	Tolstoi	84
27	Northeast Point (to date)	66
Dec. 12	Reef	420
19	.....do	421
	Total	63,295
1884		
Jan. 2	Reef Northeast Point (to date)	177 36
May 15	.....do	20
21	Halfway Point and Reef	187
24	Northeast Point (to date)	15
27	Southwest Bay and Reef	427
June 3	Reef	318
5	Southwest and English bays, Zoltoi	767
9	Reef and Halfway Point	1,239
10	Ketova and Tolstoi	426
11	Southwest Bay and Halfway Point	1,364
12	Zoltoi, Ketova English Bay	865
13	Zoltoi and Reef	771
14	Halfway Point	838
16	Southwest Bay	1,424
17	English Bay, Tolstoi, Reef, Zoltoi	1,266
18	Halfway Point	912
19	English Bay and Tolstoi	487
20	Southwest Bay	1,793
21	Zoltoi and Reef	1,117
21	Northeast Point	3,992
23	Halfway Point and Zoltoi	2,163
24	Zoltoi, Reef, Lukannon, Ketova	1,729
25	Southwest Bay	1,197
26	English Bay, Middle Hill, Tolstoi	2,546
27	Zoltoi, Reef, Ketova	1,830
27	Northeast Point	5,134
28	Tolstoi, Middle Hill, Lukannon	1,500
30	Zoltoi and Halfway Point	1,662
July 1	Zoltoi, Reef, Tolstoi, Lukannon	1,826
2	English Bay and Middle Hill	1,888
3	Southwest Bay, Zoltoi, Middle Hill, Lukannon	1,340
4	English Bay and Tolstoi	1,522
1884.		
July 1-4	Northeast Point	5,799
5	Zoltoi, Reef, Ketova	1,251
7	Halfway Point	1,935
8	Reef, Zoltoi, Lukannon	2,071
9	Southwest Bay	1,966
10	English Bay, Middle Hill, Tolstoi	1,920
7-10	Northeast Point	3,003
12	Middle Hill, Tolstoi, Lukannon, Zoltoi, Reef	3,067
14	Halfway Point and Zoltoi	2,515
15	Southwest Bay	2,052
16	English Bay, Middle Hill, Ketova	1,526
17	Zoltoi and Lukannon	1,782
18	English Bay, Tolstoi, Middle Hill	1,872
14-18	Northeast Point	5,089
19	Middle Hill, Tolstoi, Lukannon, Ketova, Zoltoi, Reef	2,529
21	Middle Hill, Zoltoi, Tolstoi, Ketova	1,911
Aug. 1	Zoltoi	198
5	.....do	92
12	.....do	80
19	.....do	90
26	.....do	78
Sept. 2	.....do	160
12	.....do	147
19	.....do	131
27	.....do	150
Oct. 5	.....do	142
14	Lukannon	144
22	Reef	115
30	English Bay	179
Nov. 3	Reef	1,956
5	.....do	785
10	Tolstoi	182
24	Reef	153
Dec. 5	.....do	495
6	English Bay	265
24	Reef	244
	Total	88,861
1885.		
May 19	Sea Lion Rock	181
27	Reef	141
June 3	Zoltoi	49
6	Zoltoi and Reef	73
11	.....do	125
13	Tolstoi and English Bay	587
15	Halfway Point	741
16	Zoltoi and Reef	973
17	Southwest Bay	1,700
18	English Bay, Middle Hill, Zoltoi	617
19	Lukannon and Halfway Point	1,309
20	Zoltoi and Reef	986
22	Zoltoi, Reef, Lukannon	789
22	Northeast Point	1,532
23	Halfway Point and Zoltoi	1,143
23	Northeast Point	847
24	English Bay, Southwest Bay, Middle Hill	1,733
25	Reef and Lukannon	1,681
25	Northeast Point	1,051
26	Halfway Point	1,373
26	Northeast Point	667
27	Lukannon, Zoltoi, Reef	1,328
27	Northeast Point	539
29	Southwest Bay	1,602
29	Northeast Point	553
30	English Bay and Middle Hill	2,681

Tables showing in detail all killing of fur seals, for whatsoever purpose, on the Pribilof Islands during the term of the lease of the Alaska Commercial Company—that is, from 1870 to 1889, both inclusive—Continued.

ST. PAUL ISLAND—Continued.

Date.	Rookery.	Total killed for all purposes.
1885.		
June 30	Northeast Point	1,053
July 1	Reef, Lukannon, Zoltoi, Ketova	1,777
1	Northeast Point	1,096
2	Tolstoi, Middle Hill, English Bay	1,465
2	Northeast Point	631
3	Halfway Point and Zoltoi	2,134
3	Northeast Point	658
4	Lukannon and Zoltoi	976
4	Northeast Point	161
6	Southwest Bay	1,271
6	Northeast Point	522
7	Middle Hill, Southwest Bay, Tolstoi	2,664
7	Northeast Point	1,184
8	Zoltoi, Lukannon, Ketova	2,550
8	Northeast Point	746
9	Middle Hill and Tolstoi	1,294
9	Northeast Point	793
10	Halfway Point	2,304
10	Northeast Point	671
13	Southwest Bay	2,134
13	Northeast Point	822
14	English Bay and Tolstoi	2,692
14	Northeast Point	955
15	Zoltoi	2,139
15	Northeast Point	363
16	Halfway Point and Lukannon	2,137
16	Northeast Point	757
17	Zoltoi	2,203
17	Northeast Point	647
18	Reef, Tolstoi, Middle Hill	1,552
18	Northeast Point	616
20	Southwest Bay	1,591
20	Northeast Point	828
21	Middle Hill and English Bay	2,723
21	Northeast Point	474
22	Zoltoi and Lukannon	2,743
22	Northeast Point	687
23	Middle Hill, English Bay, Zoltoi	1,603
23	Northeast Point	631
24	Halfway Point, Middle Hill, Ketova	2,498
25	English Bay, Zoltoi, Ketova, Middle Hill, Lukannon, Reef	2,215
27	Zoltoi, Reef, Middle Hill	983
Aug. 3	Zoltoi	147
12	....do	179
21	Zoltoi and Reef	185
Sept. 5	Zoltoi	135
12	....do	155
25	....do	152
Oct. 7	....do	78
14	....do	122
26	....do	85
Nov. 2	Reef	1,524
4	....do	964
7	....do	300
9	Middle Hill	332
21	Reef	148
Dec. 4, 17	....do	1,096
31	Northeast Point	48
	Total	88,880
1886.		
Jan. 21	Sea Lion Rock	84
29	Southwest Bay	49
May 5	Northeast Point	7
8	....do	5
17	Southwest Bay and Reef	300
10–17	Northeast Point	49
1886.		
May 29	Reef	153
June 4	....do	562
8	Tolstoi, English Bay, Southwest Bay	1,323
9	Halfway Point	299
10	Reef and Zoltoi	634
11	English Bay	214
14	Lukannon Reef	427
14	Northeast Point	1,343
15	Southwest Bay	1,166
15	Northeast Point	1,116
16	English Bay, Middle Hill, Tolstoi	850
16	Northeast Point	585
17	Halfway Point	833
17	Northeast Point	761
18	Reef and Zoltoi	651
18	Northeast Point	376
19	English Bay, Middle Hill, Tolstoi	1,064
19	Northeast Point	371
21	Southwest Bay	1,891
21	Northeast Point	1,161
22	English Bay and Tolstoi	1,007
22	Northeast Point	659
23	Halfway Point	1,770
23	Northeast Point	955
24	Zoltoi	1,555
24	Northeast Point	498
25	Reef, Zoltoi, English Bay, Middle Hill, Tolstoi	2,158
25	Northeast Point	581
26	....do	441
28	Southwest Bay	1,070
28	Northeast Point	926
29	English Bay, Tolstoi, Zoltoi	1,503
29	Northeast Point	794
30	Halfway Point	490
30	Northeast Point	1,056
July 1	English Bay and Tolstoi	1,319
1	Northeast Point	1,202
2	Southwest Bay	856
2	Northeast Point	566
3	Reef and Zoltoi	1,263
5	English Bay and Tolstoi	1,163
5	Northeast Point	1,180
6	Halfway Point	942
6	Northeast Point	866
7	Zoltoi, Reef, Lukannon	1,969
7	Northeast Point	1,187
8	Southwest Bay	1,466
8	Northeast Point	952
9	English Bay, Middle Hill, Tolstoi	1,563
9	Northeast Point	636
10	Reef, Zoltoi, Ketova, Lukannon	1,133
12	Halfway Point	1,044
13	Southwest Bay and Southwest Point	1,442
12	Northeast Point	1,501
14	English Bay and Middle Hill	1,074
14	Northeast Point	602
15	Zoltoi, Reef, Ketova, Lukannon	1,957
15	Northeast Point	899
16	Halfway Point	937
16	Northeast Point	1,013
17	Southwest Bay and Southwest Point	2,057
17	Northeast Point	407
19	Reef and Zoltoi	2,312
19	Northeast Point	753
20	English Bay, Middle Hill, Tolstoi	3,140
20	Northeast Point	801

***Tables showing in detail all killing of fur seals, for whatsoever purpose, on the Pribilof Islands during the term of the lease of the Alaska Commercial Company—that is, from 1870 to 1889, both inclusive*—Continued.**

ST. PAUL ISLAND—Continued.

Date.	Rookery.	Total killed for all purposes.
1886.		
July 21	Halfway Point	1,476
21	Northeast Point	312
22	Southwest Bay and Southwest Point	2,015
22	Northeast Point	923
23	Reef, Zoltoi, Lukannon, Ketova	3,147
23	Northeast Point	739
24	English Bay and Middle Hill	1,625
24	Northeast Point	658
26	Halfway Point, Southwest Bay, Lukannon, Zoltoi	1,993
Aug. 3	Zoltoi	75
9	.....do	152
19	.....do	134
30	.....do	96
Sept. 6	.....do	148
17	.....do	146
29	Reef	148
Oct. 11	.....do	144
28	.....do	152
Nov. 5	.....do	768
6	Reef and Lukannon	445
8	Reef	900
10	.....do	711
22	.....do	379
23	Tolstoi	289
Dec. 1	Reef	380
21	Tolstoi	191
	Total	88,085
1887.		
May 24	Reef and Southwest Bay	275
June 1	Northeast Point	138
6	Tolstoi	419
9	Reef and Zoltoi	315
11	Tolstoi	501
13	Southwest Bay	407
15	Reef and Zoltoi	526
16	Halfway Point	750
17	English Bay and Tolstoi	765
20	Southwest Bay	523
20	Northeast Point	1,899
21	Reef	1,641
21	Northeast Point	452
22	English Bay, Tolstoi, Lukannon	1,004
22	Northeast Point	1,172
23	Halfway Point	1,314
	Northeast Point	521
24	Reef and Zoltoi	1,165
24	Northeast Point	709
23	Tolstoi, Middle Hill, English	
25	Bay	1,961
27	West Point and Southwest Bay	1,180
27	Northeast Point	1,205
28	Reef, Zoltoi, Ketova, Lukannon	2,964
28	Northeast Point	691
29	Middle Hill and Tolstoi	1,895
29	Northeast Point	1,144
30	Halfway Point	1,604
30	Northeast Point	1,203
July 1	English Bay	1,162
1	Northeast Point	1,201
2	Reef and Zoltoi	1,616
2	Northeast Point	624
4	Tolstoi and Middle Hill	1,703
4	Northeast Point	1,196
5	Reef, Zoltoi, Lukannon	2,023
5	Northeast Point	1,056
6	Halfway Point	990
6	Northeast Point	1,247
7	English Bay and Tolstoi	1,622
7	Northeast Point	994
8	Reef and Zoltoi	1,125
1887.		
July 8	Northeast Point	795
9	Southwest Bay	2,065
9	Northeast Point	429
12	English Bay, Tolstoi, Lukannon	2,595
12	Northeast Point	2,219
13	Reef, Zoltoi, Ketova	3,029
13	Northeast Point	1,930
14	Halfway Point	1,201
14	Northeast Point	826
15	Tolstoi and Lukannon	1,298
15	Northeast Point	803
16	Reef and Zoltoi	926
16	Northeast Point	546
17	West Point	617
18	Southwest Bay	2,108
18	Northeast Point	1,671
19	English Bay, Middle Hill, Tolstoi	2,038
19	Northeast Point	922
20	Reef, Zoltoi, Lukannon, Ketova	3,209
20	Northeast Point	11,092
21	Halfway Point and Lagoon	1,397
21	Northeast Point	798
22	English Bay, Tolstoi, Middle Hill	1,877
22	Northeast Point	1,082
23	Southwest Bay, Reef, Zoltoi, Lukannon	2,226
24	Tolstoi	232
31	Northeast Point	39
Aug. 1	Zoltoi	137
8	.....do	113
16	Reef and Lukannon	209
24	English Bay	521
Sept. 5	Middle Hill	403
6	English Bay	356
15	Zoltoi	192
28	.....do	100
Oct. 6	.....do	116
17	.....do	108
26	.....do	76
Nov. 1	Reef	1,013
3	.....do	1,132
4	.....do	32
6	Zoltoi	65
7	Middle Hill	611
25	Reef	82
26	Middle Hill and Tolstoi	185
Dec. 9	.....do	450
15	Sea Lion Rock and Southwest Bay	169
	Total	89,092
1888.		
Jan. 25	Northeast Point	545
May 19	Tolstoi, Reef, Sea Lion Rock	131
24	Reef	113
28	.....do	82
31	Northeast Point	82
June 2	Reef	121
7	Reef and Zoltoi	175
9	Tolstoi	342
11	Southwest Bay	543
12	English Bay	587
15	Halfway Point	428
16	Reef and Zoltoi	789
18	Southwest Bay	764
18	Northeast Point	1,490
19	Tolstoi	490
19	Northeast Point	930
21	Reef and Zoltoi	1,400
21	Northeast Point	1,604
22	Halfway Point	801

Tables showing in detail all killing of fur seals, for whatsoever purpose, on the Pribilof Islands during the term of the lease of the Alaska Commercial Company—that is, from 1870 to 1889, both inclusive—Continued.

ST. PAUL ISLAND—Continued.

Date.	Rookery.	Total killed for all purposes.
1888.		
June 22	English Bay, Tolstoi, Middle Hill	702
23	Northeast Point	565
22	.....do	973
25	Southwest Bay	1,440
25	Northeast Point	870
26	English Bay, Middle Hill, Tolstoi	1,158
26	Northeast Point	1,509
27	Reef, Zoltoi, Ketova, Lukannon	2,005
27	Northeast Point	850
28	Halfway Point	911
28	Northeast Point	1,180
29	Southwest Bay	1,098
29	Northeast Point	625
30	Middle Hill, English Hill, Tolstoi	1,625
30	Northeast Point	964
July 2	Reef and Zoltoi	2,071
2	Northeast Point	1,413
3	Halfway Point	1,188
3	Northeast Point	1,439
4	Southwest Bay	822
4	Northeast Point	1,241
5	English Bay, Tolstoi, Lukannon	1,942
5	Northeast Point	446
6	Reef and Zoltoi	1,491
6	Northeast Point	1,609
7	Halfway Point	490
7	Northeast Point	906
9	English Bay, Tolstoi, Lukannon, Middle Hill	2,398
9	Northeast Point	1,740
10	Reef and Zoltoi	1,083
10	Northeast Point	959
12	English Bay, Middle Hill, Tolstoi	1,557
12	Northeast Point	927
13	Southwest Bay	1,337
13	Northeast Point	912
14	Halfway Point	773
15	Northeast Point	550
15	West Point	481
16	Reef and Zoltoi	2,004
16	Northeast Point	1,038
17	English Bay and Tolstoi	2,055
17	Northeast Point	1,328
18	Southwest Bay	2,216
18	Northeast Point	1,004
19	Halfway Point	1,410
19	Northeast Point	705
20	Reef and Zoltoi	2,018
20	Northeast Point	646
21	English Bay and Tolstoi	1,157
21	Lagoon	190
21	Northeast Point	742
23	Reef, Lukannon, Zoltoi	1,269
23	Northeast Point	917
24	Halfway Point	347
24	Northeast Point	970
25	English Bay, Tolstoi, Middle Hill	1,619
25	Northeast Point	1,028
26	Reef, Zoltoi, Lukannon	1,353
26	Northeast Point	650
27	Southwest Bay and Zoltoi	950
Aug. 2	Zoltoi	177
8	.....do	140
16	.....do	159
23	Middle Hill and Lukannon	364
24	Zoltoi	321
24	.....do	19
1888.		
Sept. 6	Zoltoi	114
15	.....do	100
22	.....do	98
29	.....do	96
Oct. 10	Lukannon	83
18	Middle Hill	98
27	.....do	111
Nov. 3	Middle Hill and Zoltoi	126
5	Reef	761
7	.....do	547
8	.....do	716
9	.....do	154
15	Middle Hill	277
26	Reef	111
30	.....do	129
Dec. 17	Tolstoi	206
26	Sea Lion Rock	78
	Total	86,270
1889.		
May 22	Sea Lion Rock	124
25	Reef	41
28	.....do	234
31	Northeast Point	133
June 5	Reef	201
10	.....do	120
12	Tolstoi	947
14	Zoltoi and Reef	762
15	Southwest Bay	340
17	Halfway Point	895
17	Northeast Point	1,054
18	English Bay, Tolstoi, Middle Hill	1,161
18	Northeast Point	1,270
19	.....do	494
19	Reef, Zoltoi, Lukannon	1,561
20	Southwest Bay	253
21	Northeast Point	1,205
22	English Bay, Tolstoi, Middle Hill	1,355
24	Northeast Point	754
24	Reef and Zoltoi	2,578
25	Halfway Point and Lukannon	979
25	Northeast Point	1,407
26	English Bay and Middle Hill	1,314
26	Northeast Point	441
27	Southwest Bay	311
27	Northeast Point	844
28	Reef, Zoltoi, Ketova	1,349
28	Northeast Point	479
29	.....do	335
29	English Bay and Tolstoi	1,038
July 1	Northeast Point	1,200
1	Reef, Zoltoi, Lukannon	1,023
2	Halfway Point	834
2	Northeast Point	968
3	English Bay, Tolstoi, Middle Hill	1,841
4	Reef, Zoltoi, Lukannon	1,706
4	Northeast Point	1,559
5	Southwest Bay	1,255
5	Northeast Point	1,524
6	English Bay, Tolstoi, Middle Hill	1,302
6	Northeast Point	376
8	Reef, Zoltoi, Lukannon	814
8	Northeast Point	914
9	English Bay and Tolstoi	1,814
9	Northeast Point	641
10	Halfway Point	654
10	Northeast Point	800
12	Reef and Zoltoi	2,004

Tables showing in detail all killing of fur seals, for whatsoever purpose, on the Pribi Islands during the term of the lease of the Alaska Commercial Company—that is, fr 1870 to 1889, both inclusive—Continued.

ST. PAUL ISLAND—Continued.

Date.	Rookery.	Total killed for all purposes.	Date.	Rookery.	Tot kill for pu pos
1889.			1889.		
July 13	Southwest Bay	1,006	July 27	Zoltoi and Lukannon	1,
13	Northeast Point	793	29	English Bay and Middle Hill	1,
15	English Bay and Middle Hill	3,085	29	Northeast Point	1,
15	Northeast Point	1,838	30	Halfway Point	
16	Reef, Zoltoi, Lukannon	1,911	30	Southwest Bay	
16	Northeast Point	1,156	31	Northeast Point	
17	Halfway Point and Lukannon	1,931	31	Zoltoi	
17	Northeast Point	948	Aug. 6	Lukannon	
18	Lagoon, English Bay, Middle Hill	2,046	14	Zoltoi	
18	Northeast Point	1,282	22	.....do	
19	Southwest Bay	2,017	31	Tolstoi	
19	Northeast Point	834	Sept. 9	Zoltoi	
20	Reef and Zoltoi	1,913	18	.....do	
20	Northeast Point	243	25	.....do	
22	English Bay, Middle Hill, Lukannon	1,943	Oct. 5	.....do	
22	Northeast Point	350	15	.....do	
23	Reef Zoltoi, Ketova	1,122	26	Lukannon	
23	Northeast Point	740	Nov. 4	Zoltoi	1,
24	Halfway Point	1,384	19	Tolstoi	1,
24	Northeast Point	616	21	Reef	
25	English Bay and Middle Hill	1,756	27	.....do	
25	Northeast Point	1	27	Zapadnie	
26	Southwest Bay	680	30	Reef	
26	Northeast Point	1,483	Dec. 11	Zapadnie	
				Total	73,

ST. GEORGE ISLAND.

1870.			1872.		
	Not indicated in the records of this year.		June 3	Southwest Bay	
	Alaska Commercial Co., Hutchinson, Kohl & Co.	1,200	5	North	
		473	8	East	
		6,786	10	Southwest Bay	
	Total	8,459	11	North	
			11	Starry Arteel	
1871.			12	Southwest Bay	
June 4	Near	123	12	East	
6	Northeast	98	15	Starry Arteel	
8	Near	69	15	North	
9	Southwest Bay	277	17	East	
13	Starry Arteel	322	19	North	
15	Southwest Bay	301	19	Starry Arteel	
17	Northern	434	19	Southwest Bay	
20	Southwest Bay	172	22	East	
22	Northeast	518	22	North	
24	Starry Arteel	594	22	Starry Arteel	
26	Southwest Bay	298	24	Southwest Bay	
27	Northeast	462	24	East	
28	Starry Arteel	571	25	Starry Arteel	
July 1	Northern	875	25	North	
3	Southwest Bay	303	27	Starry Arteel	
5	Starry Arteel	518	28	North	
8	Southwest Bay	612	29	Starry Arteel	
10	Northern	1,769	29	Southwest Bay	
12	.....do	1,021	July 1	East	
14	Southwest Bay	481	2	North	
15	Northern	1,038	2	Starry Arteel	
18	.....do	1,264	3	Southwest Bay	
20	Southwest Bay	484	4	East	
21	Northern	945	5	Starry Arteel	
23	Southwest Bay	542	6	Southwest Bay	
25	Northern	792	6	North	
27	.....do	1,054	7	East	
28	Starry Arteel	730	9	Starry Arteel	
30	Southwest Bay	1,270	9	North	
31	Northern	893	10	East	
	Taken in October	237	11	Southwest Bay	1,
	Pups for food	2,090	12	North	
	Total	21,157	14	East	1,
			15	Starry Arteel	
			15	North	
			17	East	
			18	Starry Arteel	

Tables showing in detail all killing of fur seals, for whatsoever purpose, on the Pribilof Islands during the term of the lease of the Alaska Commercial Company—that is, from 1870 to 1889, both inclusive—Continued.

ST. GEORGE ISLAND—Continued.

Date.	Rookery.	Total killed for all purposes.
1872.		
July 19	Southwest Bay	1,171
20	East	400
22	Starry Arteel	600
22	North	320
23	East	703
25	Starry Arteel	300
25	East	400
25	North	252
27	East	350
27	North	85
27	Starry Arteel	200
27	Southwest Bay	227
	Killed for natives' food	2,000
	Total	27,000
1873.		
June 4	North	198
5	Starry Arteel	240
6	Southwest Bay	285
9	East and Starry Arteel	190
10	Southwest Bay	275
12	North	300
13	Southwest Bay	521
16	North and Starry Arteel	378
17	Southwest Bay	174
19	East	313
21	Starry Arteel and North	506
21	Southwest Bay	870
23	East	180
24	Southwest Bay	499
25	Starry Arteel and North	195
26	East	241
27	Southwest Bay	301
28	Starry Arteel and North	493
30	Southwest Bay	310
30	East	168
July 2	Starry Arteel	332
3	Southwest Bay	564
4	East	592
5	Starry Arteel	517
8	Southwest Bay	743
8	East	616
9	Starry Arteel and North	690
11	East	974
11	Southwest Bay	602
12	Starry Arteel and North	474
13	East	345
14	Southwest Bay	337
16	Starry Arteel and North	480
17	East	1,097
18	Southwest Bay	913
20	Starry Arteel and North	1,359
21	East	1,810
23	Southwest Bay	513
23	Starry Arteel	889
25	East	1,710
26	Southwest Bay	600
28	Starry Arteel	588
28	East	1,528
	Pups killed for food	2,190
	Total	27,190
1874.		
June 1	North	56
8	do	81
11	East	116
12	Starry Arteel and North	154
14	Southwest Bay	250
16	East	170
18	Starry Arteel and North	354
22	East	178
23	Starry Arteel and North	378
27	Southwest Bay	575
1874.		
June 29	Starry Arteel and North	686
July 1	East	800
3	Starry Arteel and North	792
8	East	641
9	do	548
14	East and North	263
15	East	534
16	Starry Arteel	568
18	Southwest Bay	411
20	East	871
22	East and North	778
24	East	640
24	North	156
	Pups killed for food	2,446
	Total	12,446
1875.		
June 1	Starry Arteel and North	302
9	do	256
11	East	177
14	Starry Arteel and North	307
16	East	358
18	Starry Arteel and North	334
19	Southwest Bay	1,294
23	East	666
24	Starry Arteel and North	540
28	East	692
30	Starry Arteel and North	1,412
July 5	East	717
7	Starry Arteel and North	1,019
12	East	1,073
14	North	676
17	do	177
	Killed for food	1,500
	Total	11,500
1876.		
June 1	North	415
8	Starry Arteel and North	372
12	East	388
14	Southwest Bay	599
15	Starry Arteel and North	784
22	East	581
25	Starry Arteel and North	2,067
27	East	1,168
29	Starry Arteel and North	1,023
July 3	East	1,259
6	Starry Arteel	1,027
7	East	317
	Pups for food	1,500
	Total	11,500
1877.		
June 1	North	198
12	do	702
13	East	578
14	Southwest Bay	1,389
18	North and Starry Arteel	1,154
20	East	838
22	North	871
23	East	552
26	North and Starry Arteel	1,860
29	East	1,589
July 3	North and Starry Arteel	1,669
6	East	2,164
9	North	300
10	East	880
	Killed for food	256
	do	1,500
	Total	16,500

Tables showing in detail all killing of fur seals, for whatsoever purpose, on the Pribi Islands during the term of the lease of the Alaska Commercial Company—that is, fr 1870 to 1889, both inclusive—Continued.

ST. GEORGE ISLAND—Continued.

Date.	Rookery.	Total killed for all purposes.
1878.		
June 10	North	325
14	Southwest Bay	1,074
17	North, Starry Arteel, East	858
19	Southwest Bay	717
22	North and Starry Arteel	570
25	East	324
27	Southwest Bay	851
28	do	517
	Killed for food to date	405
July 1	East	644
2	North and Starry Arteel	930
4	Southwest Bay	1,433
8	East	793
10	North and Starry Arteel	1,333
12	Southwest Bay	328
13	do	1,025
15	East	1,892
17	East and North	1,290
19	North and Starry Arteel	1,577
21	East	1,291
	Killed for food to May 19, 1879	2,627
	Total	20,804
1879.		
June 3	North	69
	East	450
10	Southwest Bay	105
11	Starry Arteel	413
12	Southwest Bay	372
13	East	445
16	Southwest Bay	502
17	Starry Arteel and North	755
19	East	473
20	Southwest Bay	434
20	North and Starry Arteel	515
23	Southwest Bay	576
23	East	888
25	Southwest Bay	524
25	do	278
26	North and Starry Arteel	1,179
27	East	1,595
30	North and Starry Arteel	1,414
July 3	Southwest Bay	849
3	do	351
4	North	535
5	East	1,775
6	North and Starry Arteel	1,263
8	East	1,840
14	North	863
16	Southwest Bay	1,36[illegible]
16	do	8
24	North	63
28	do	48
Aug. 6	do	68
10	North	54
Sept. 1	do	47
23	do	58
Oct. 2	do	48
15	do	18
Nov. 3	do	318
8	Killed for food	1,506
8	Southwest Bay and Starry Arteel	113
Dec. 6		
	Total	22,190
1880.		
May 18	North	14
26	Starry Arteel	23
June 3	North	92
9	East	338
12	North and Starry Arteel	564

Date.	Rookery.	To kill for pu pos
1880.		
June 14	East	
15	Southwest Bay	
17	do	
17	North and Starry Arteel	
19	East	
19	Southwest Bay	
21	North and Starry Arteel	1,
22	Southwest Bay	
23	East	
25	Southwest Bay	
25	North and Starry Arteel	1,
28	East	1,
29	Southwest Bay	
30	Starry Arteel	
July 1	North	
2	East	
2	Southwest Bay	
5	North and Starry Arteel	
6	East	1,
7	Southwest Bay	1,
9	East	
	During season perished on the drives	
16	North	
17	Zapadnie	
20	do	
28	North	
Aug. 6	do	
11	North and East	
Sept. 1	North	
2	Zapadnie	
27	North	
Oct. 5	do	
28	do	
Nov. 1	do	
9	Zapadnie	
18	do	
Dec. 1	East	
3	Zapadnie	
	Total	20,
1881.		
May 21	North	
31	do	
June 9	Starry Arteel, East, North	
13	do	
15	Zapadnie	
16	Starry Arteel, North, East	
20	do	
21	East and Zapadnie	1,
23	Starry Arteel, North, Zapadnie	
24	East	
27	Starry Arteel and North	
28	East and Zapadnie	1,
30	Zapadnie, Starry Arteel, North	1,
July 1	East	1,
4	Starry Arteel and North	1,
6	Zapadnie	
7	East	1,
8	Starry Arteel and North	
11	East	1,
12	Starry Arteel	
12	Zapadnie	
14, 15	East	1,
14	Zapadnie	
16	East, North, Starry Arteel	1,
26	North	
30	do	
Aug. 9	do	
15	do	
26	do	
Sept. 3	do	

Tables showing in detail all killing of fur seals, for whatsoever purpose, on the Pribilof Islands during the term of the lease of the Alaska Commercial Company—that is, from 1870 to 1889, both inclusive—Continued.

ST. GEORGE ISLAND—Continued.

Date.	Rookery.	Total killed for all purposes.
1881.		
Sept. 13	North	65
24	East	88
Oct. 3	North	68
22	East	50
Nov. 2	North	559
10	.....do	472
30	Starry Arteel	113
	Total	21,289
1882.		
May 22	North	12
29	.....do	48
June 6	.....do	26
12	Starry Arteel, North, East	509
16	.....do	890
19	.....do	927
22	.....do	847
24	.....do	1,195
27	.....do	1,044
29	.....do	1,273
July 1	.....do	1,065
3	.....do	911
5	.....do	1,384
8	.....do	1,955
10	East	1,371
11	Starry Arteel and North	1,115
12	East	1,070
14	Starry Arteel and North	527
15	East	649
17	Starry Arteel and North	1,022
18	East	1,086
19	Starry Arteel and North	655
20	North	50
Aug. 5	East	40
11	Starry Arteel	45
17	East	34
25	.....do	44
Sept. 15	.....do	46
Nov. 22	Starry Arteel	119
28	.....do	19
	Total	19,978
1883.		
May 26	North	40
June 4	.....do	78
12	Starry Arteel and East	136
15	.....do	287
19	Starry Arteel	61
22	East and Starry Arteel	380
25	East, North, Starry Arteel	684
28	.....do	443
30	.....do	611
July 2	.....do	340
4	.....do	200
7	.....do	647
9	Zapadnie	1,336
10	Little East and East	307
10	Zapadnie	507
11	North and Starry Arteel	263
12	Little East and East	546
13	North and Starry Arteel	321
16	Little East and East	775
17	Zapadnie	1,017
17	Starry Arteel and North	130
18	Little East and East	467
19	Zapadnie	1,216
20	Little East and East	281
21	Zapadnie	1,150
23	North, East, Starry Arteel	766
25	East	78
27	Starry Arteel, North, East	606
30	.....do	505
1883.		
July 31	Starry Arteel, North, East	473
	During the season, perished on drives	38
Aug. 13	East	100
21	Near	50
31	Little East	60
Sept. 14	East	54
Oct. 19	Near	120
29	Near and North	540
Nov. 2	North	340
19	North and Starry Arteel	171
	Total	16,214
1884		
May 21	East	15
26	North	52
June 4	East	119
10	Zapadnie	1,222
12	Starry Arteel, North, East	694
16	Zapadnie	585
18	Starry Arteel, North, East	572
21	Zapadnie	592
23	Starry Arteel, North, East	603
26	Zapadnie	578
28	Starry Arteel, North, East	489
July 1	Zapadnie	289
1	.....do	11
3	Starry Arteel, North, East	71
7	Zapadnie	90
10	Starry Arteel, North, East	1,269
12	Zapadnie	973
14	East and Little East	302
15	Starry Arteel and North	465
16	Zapadnie	726
18	East and Little East	996
19	Starry Arteel and North	506
23	Zapadnie	797
24	Starry Arteel and North	744
25	East and Little East	597
26	Zapadnie	573
30	Starry Arteel, North, East	640
Aug. 4	East	225
4	.....do	19
14	North	48
21	East	64
Sept. 2	Near	60
15	North	60
Nov. 3	.....do	515
5	.....do	482
12	.....do	503
26	Starry Arteel	27
	Total	16,573
1885.		
May 18	North	40
June 1	.....do	38
11	Starry Arteel, North, East	750
15	Zapadnie	77
18	.....do	698
17	Starry Arteel and North	802
15	East	825
22	Zapadnie	414
27	Starry Arteel, North, East	1,775
29	Zapadnie	401
July 3	Starry Arteel, North, East	2,287
7	Zapadnie	780
10	Starry Arteel, North, East	2,158
13	Zapadnie	1,011
17	Starry Arteel, North, East	2,222
20	Zapadnie	483
25	North	35
Aug. 3	.....do	28

Tables showing in detail all killing of fur seals, for whatsoever purpose, on the Pribilof Islands during the term of the lease of the Alaska Commercial Company—that is, from 1870 to 1889, both inclusive—Continued.

ST. GEORGE ISLAND—Continued.

Date.	Rookery.	Total killed for all purposes.
1885.		
Aug. 6	North	50
21	East	65
25	North	37
Nov. 4	Near	250
6	North	700
18	.....do	120
21	Starry Arteel	41
	Perished on drives during year.	53
	Total	16,144
1886.		
May 18	East	39
28	North	102
June 8	Captured skins	4
14	Zapadnie food skins	81
10	Starry Arteel, North, East	1,430
14	Zapadnie	779
17	Starry Arteel, North, East	1,438
21	Zapadnie	843
22	Starry Arteel and North	742
23	East	343
24	Zapadnie	306
28	.....do	288
29	Starry Arteel and North	632
July 1	East	482
5	Zapadnie	620
6	Starry Arteel and North	503
7	East	650
10	Starry Arteel and North	867
12	Zapadnie	745
14	East	888
15	Starry Arteel and North	712
19	Zapadnie	663
21	Starry Arteel and North	853
22	East	527
23	East and North	295
Aug. 2	Near North	14
2	.....do	11
9	East	66
17	North	42
23	East	70
Sept. 6	North	76
Oct. 26	.....do	759
28	East	24
Nov. 8	North	527
13	East	3
	Perished on drive	12
	Total	16,436
1887.		
May 20	North	25
28	.....do	32
June 9	North and East	390
14	North, East, Starry Arteel	465
15	Zapadnie	427
20	.....do	261
21	Starry Arteel, North, East	974
25	East	533
27	Zapadnie	599
28	Starry Arteel and North	847
30	East	410
July 1	Starry Arteel and North	100
4	Zapadnie	883
6	East, North, Starry Arteel	1,321
8	East	421
11	Zapadnie	701
12	Starry Arteel, Near, North	1,296
14	East	1,509
18	Zapadnie	1,077
19	Near, North, Starry Arteel	894
21	East	1,130
22	Starry Arteel and North	489
1887.		
Aug. 3	Near	53
6	East	41
12	.....do	87
20	.....do	22
22	.....do	61
Sept. 5	Near	44
10	Zapadnie	24
19	.....do	45
Oct. 24	East	126
Nov. 1	Near	766
7	.....do	614
	Total	16,668
1888.		
June 6	North	121
11	Zapadnie	272
12	Starry Arteel, North, East	455
16	.....do	227
18	Zapadnie	427
19	Starry Arteel, North, East	324
22	.....do	764
25	Zapadnie	911
26	Starry Arteel and North	895
27	East	438
29	Starry Arteel and North	343
July 2	Zapadnie	343
3	East	532
4	Starry Arteel and North	503
6	East	650
9	Zapadnie	389
10	Starry Arteel and North	1,170
12	East	820
13	Starry Arteel and North	518
16	Zapadnie	705
17	North	410
18	Starry Arteel and East	692
19	Zapadnie	366
20	Starry Arteel, North, East	554
23	Zapadnie	179
24	Starry Arteel, North, East	405
25	Zapadnie	159
26	Starry Arteel, North, East	521
27	Zapadnie	144
27	Starry Arteel, North, East	410
Aug. 9	Near	39
9	North	39
15	.....do	37
20	East	191
28	Starry Arteel and North	494
Sept. 5	East and Starry Arteel	428
27	North	40
Oct. 20	North and East	73
Nov. 1	North	610
5	.....do	368
Aug. 20	Zapadnie (for watchmen)	68
	Total	17,034
1889.		
May 22	North and East	60
June 4	East	156
10	Zapadnie	207
17	.....do	244
18	Starry Arteel, North, East	773
21	East	176
22	North and Starry Arteel	284
24	Zapadnie	596
25	East and North	496
27	Zapadnie	223
29	Starry Arteel and East	429
July 1	Zapadnie	167
2	North, East, Starry Arteel	275
5	.....do	418

Tables showing in detail all killing of fur seals, for whatsoever purpose, on the Pribilof Islands during the term of the lease of the Alaska Commercial Company—that is, from 1870 to 1889, both inclusive—Continued.

ST. GEORGE ISLAND—Continued.

Date.	Rookery.	Total killed for all purposes.	Date.	Rookery.	Total killed for all purposes.
1889.			1889.		
July 8	Zapadnie	229	Aug. 10	North	55
10	North, East, Starry Arteel	270	19	do	56
12	Zapadnie	192	30	do	48
13	North, East, Starry Arteel	667	Sept. 7	East	64
15	Zapadnie	371	21	do	50
16	North, East, Starry Arteel	1,028	30	North	33
18	Zapadnie	439	Oct. 11	do	37
19	North, East, Starry Arteel	1,140	21	Starry Arteel	32
22	Zapadnie	500	31	North	4
23	North, East, Starry Arteel	628	Nov. 6	do	606
24	Zapadnie	279	12	do	477
25	North, East, Starry Arteel	1,430	25	Starry Arteel	61
27	do	942			
28	Zapadnie	568		Total	15,225
29	North, East, Starry Arteel	515			

Fur seals killed on the island of St. Paul, for all purposes, from 1870 to 1889, both inclusive.

[Compiled from tables on file in the Treasury Department.]

Year.	Seals killed for natives' food.				Seals killed for skins for lessees.			Total of bachelors killed, accepted and rejected.			Grand total of seals killed for all purposes.
	Pups.	Bachelors.	Skins accepted.	Skins rejected.	Bachelors.	Skins accepted.	Skins rejected.	Bachelors.	Skins accepted.	Skins rejected.	
1870	2,800	6,449	.....	6,449	6,065	6,017	48	12,514	6,017	6,497	15,314
1871	2,877	2,341	2,290	51	75,585	74,628	957	77,926	76,918	1,008	81,803
1872	5,121	6,916	5,365	1,551	69,782	69,576	206	76,698	74,941	1,757	81,819
1873	5,489	2,090	1,198	892	74,408	73,884	524	76,498	75,082	1,416	81,987
1874	4,897	4,874	4,225	649	88,368	88,258	110	93,242	92,483	759	98,139
1875	3,745	6,282	5,784	498	84,933	84,860	73	91,215	90,644	571	94,960
1876	3,958	5,061	3,064	1,997	74,138	71,137	1	79,199	77,201	1,998	83,157
1877	5,007	4,041	2,853	1,188	58,762	58,732	30	62,803	61,585	1,218	67,810
1878	5,206	4,718	3,632	1,086	78,595	78,570	25	83,313	82,202	1,111	88,519
1879	5,071	5,070	3,898	2,072	77,280	77,280	.....	83,250	81,178	2,072	88,321
1880	4,413	4,466	3,408	1,418	75,900	75,872	28	80,366	78,920	1,446	84,779
1881	.....	7,538	6,068	1,470	76,236	76,169	67	83,774	82,226	1,537	83,774
1882	.....	5,175	3,362	1,813	74,659	74,581	78	79,834	77,943	1,891	79,834
1883	2,962	3,168	2,194	974	57,145	57,070	75	60,313	59,264	1,049	63,295
1884	2,741	3,907	2,582	1,325	82,213	82,086	127	86,120	84,668	1,452	88,861
1885	2,788	3,184	2,508	676	82,908	82,866	42	86,092	85,374	718	88,880
1886	2,824	3,081	2,450	601	82,180	82,150	30	85,261	84,630	631	88,085
1887	2,177	4,207	3,975	232	82,708	82,679	29	86,915	86,654	261	89,092
1888	2,178	3,762	3,700	62	80,330	80,314	16	84,092	84,014	78	86,270
1889	2,280	3,400	2,570	830	81,712	81,698	14	85,112	84,268	844	87,392
Total	67,554	90,630	64,796	25,834	1,463,907	1,461,427	2,480	1,554,537	1,526,212	28,314	1,622,091

NOTE.—The above statement includes all seals killed from all causes, either intentional or accidental, incident to the taking of seal skins on the island of St. Paul.

Fur seals killed on the island of St. George, for all purposes, from 1870 to 1889, b inclusive.

[Compiled from tables on file in the Treasury Department.]

Year.	Seals killed for natives' food.				Seals killed for skins for lessees.			Total of bachelors killed, accepted and rejected.			Gra total seal kill for pur pose
	Pups.	Bachelors.	Skins accepted.	Skins rejected.	Bachelors.	Skins accepted.	Skins rejected.	Bachelors.	Skins accepted.	Skins rejected.	
1870	1,200	.....	.....	.....	7,259	7,259	.....	7,259	7,259	.....	8,
1871	2,090	237	237	.....	18,830	18,830	.....	19,067	19,067	.....	21,
1872	2,000	.....	.....	.....	25,000	25,000	.....	25,000	25,000	.....	27,
1873	2,190	.....	.....	.....	25,000	25,000	.....	25,000	25,000	.....	27,
1874	2,446	.....	.....	.....	10,000	10,000	.....	10,000	10,000	.....	12,
1875	1,500	.....	.....	.....	10,000	10,000	.....	10,000	10,000	.....	11,
1876	1,500	.....	.....	.....	10,000	10,000	.....	10,000	10,000	.....	11,
1877	1,500	256	256	.....	14,744	14,744	.....	15,000	15,000	.....	16,
1878	1,500	1,532	1,216	316	17,772	17,772	.....	19,304	18,988	316	20,
1879	1,506	843	564	279	19,841	19,758	83	20,684	20,322	362	22,
1880	1,330	702	565	137	18,907	18,830	77	12,609	19,395	214	20,
1881	1,031	812	509	303	19,446	19,360	86	20,258	19,869	389	21,
1882	.....	483	371	112	19,495	19,440	35	19,978	19,811	167	19,
1883	1,000	475	468	7	14,739	14,675	64	15,214	15,143	71	16,
1884	1,500	345	223	122	14,728	14,620	108	15,073	14,843	230	16,
1885	1,080	319	304	15	14,745	14,686	59	15,064	14,990	74	16,
1886	1,286	544	413	131	14,606	14,578	28	15,150	14,991	159	16,
1887	1,356	585	471	114	14,727	14,725	2	15,312	15,196	116	16,
1888	978	1,409	1,321	88	14,647	14,582	65	16,056	15,903	153	17,
1889	1,071	512	280	232	13,642	13,641	1	14,154	13,921	233	15,
Total	28,064	9,054	7,198	1,856	318,128	317,500	628	327,182	324,698	2,484	355,

NOTE.—The above statement includes all seals killed from all causes, either intentional or acciden incident to the taking of seal skins on the island of St. George.

Fur seals killed on the islands of St. Paul and St. George, for all purposes, from 1 to 1889, both inclusive.

	Seals killed for natives' food.				Seals killed for skins for lessees.			Total of bachelors killed, accepted and rejected.			Gra total seal kill for pur pose
	Pups.	Bachelors.	Skins accepted.	Skins rejected.	Bachelors.	Skins accepted.	Skins rejected.	Bachelors.	Skins accepted.	Skins rejected.	
St. Paul Island	67,554	90,630	64,796	25,834	1,463,907	1,461,427	2,480	1,554,537	1,526,212	28,314	1,622,
St. George Island	28,064	9,054	7,198	1,856	318,128	317,500	628	327,182	324,698	2,484	355,
Total	95,628	99,684	71,994	27,790	1,782,035	1,778,927	3,108	1,881,719	1,850,910	30,798	1,977,

Seals taken on St. Paul Island in 1890.

Date.	Rookery.	Total.	Date.	Rookery.	Total.
May 28	Southwest Bay	119	July 4	Tolstoi, English Bay, Middle Hill	494
June 6	Reef	116	4	Northeast Point	321
11	.....do	574	5	Reef	526
13	Tolstoi	182	5	Northeast Point	74
16	Reef	317	7	English Bay, Middle Hill, Tolstoi, Lukannon, Ketova	411
17	Northeast Point	16	7	Northeast Point	336
17	Halfway Point	167	8	Halfway Point	261
18	Tolstoi and Middle Hill	274	8	Northeast Point	379
18	Northeast Point	78	9	Southwest Bay	163
20	Reef and Lukannon	339	9	Northeast Point	271
20	Northeast Point	438	10	Reef	378
21	Southwest Bay	292	10	Northeast Point	112
21	Northeast Point	96	12	English Bay, Middle Hill, Tolstoi, Lukannon, Ketova	633
23	English Bay and Lukannon	521	13	Halfway Point	211
23	Northeast Point	179	13	Northeast Point	658
24	Reef and Zoltoi	426	14	Reef	104
24	Northeast Point	205	15	English Bay, Middle Hill, Tolstoi, Lukannon, Ketova	315
25	Halfway Point	266	15	Northeast Point	245
25	Northeast Point	166	16	.....do	312
26	Southwest Bay	117	17	Polavina, Lukannon, Ketova	372
27	English Bay and Middle Hill	396	17	Northeast Point	485
27	Northeast Point	230	18	.....do	405
28	Reef	206	18	Zapadnie	236
28	Northeast Point	79	19	Reef and Zoltoi	556
30	Tolstoi, Middle Hill, English Bay, Ketova	209	19	Northeast Point	446
30	Northeast Point	98	20	English Bay, Middle Hill, Tolstoi, Ketova, Rocky Point	780
July 1	Reef	246	20	Northeast Point	556
1	Northeast Point	131			
2	Halfway Point	242			
2	Northeast Point	96			
3	Southwest Bay	183			
3	Northeast Point	180		Total	17,124

Seals taken on St. George Island in 1890.

Date.	Rookery.	Total.	Date.	Rookery.	Total.
June 2	North	71	July 8	East and Little East	24
16	East	218	9	Starry Arteel and North	193
18	North	118	11	East	60
19	East and Little East	181	12	Starry Arteel and North	103
20	Zapadnie	394	14	Zapadnie	53
23	Starry Arteel and North	164	15	East	132
25	East and Little East	184	16	Starry Arteel and North	119
28	Starry Arteel and North	189	18	East	71
30	Zapadnie	189	20	Starry Arteel and North	641
July 1	East and Little East	149	20	Zapadnie	527
3	Starry Arteel and North	238			
5	East and Little East	57		Total	4,133
7	Zapadnie	58			

PAST AND FUTURE OF THE FUR SEAL.[1]

BY JOSEPH STANLEY-BROWN.

There are but two groups of fur seals to furnish to the world its supply of seal skins, the fur seal of the north and the fur seal of the south.

When Sir Francis Drake circumnavigated the globe in 1577–1580 the *Arctocephalus*, or southern fur seal, was to be found at not less than thirty localities, and their numbers aggregated millions. To-day the contributions of these southern waters are from three resorts, and do not usually reach 15,000 skins annually.

When Vitus Bering, in 1741, was wrecked upon the Commander Islands, off the coast of Kamchatka, and Pribilof searched out, in 1786–87, the group of islands in Bering Sea that bears his name, there were discovered, not only the chief breeding grounds of the northern fur seal, *Callorhinus ursinus*, but some of the most superb seal rookeries the world has ever known. It is questionable if mortal vision ever rested upon more magnificent displays of amphibian life than were to be seen on the island of St. Paul at the time of its discovery. To-day these subarctic resorts are prostrate; their glory also has departed, and they furnish a home for but a mere remnant of the seals that formerly swarmed in myriads along their rocky shores.

For two years the hopes of thoughtful persons were high, that through the medium of international negotiations and the deliberations of wise and able men the safety of the fur seal would be at last secured. To-day, when the decision of the Paris Tribunal is common property, we find public opinion divided on the question as to whether the practical application of the decision will preserve the fur seal as a commercial commodity.

CHARACTERISTICS OF THE SEAL.

The condition of affairs thus briefly outlined is all the more deplorable when we consider the characteristics of the animal with which we are dealing. It is a creature peculiarly adapted by its habits to man's management. It occupies no territory needed, as were the buffalo's feeding grounds, for the subsistence of more valuable domestic animals; no herders are required to prevent its being lost in the wastes of the ocean, and no expense is incurred either to protect it from the inclemency of the weather or to provide a winter food supply; yet with more certainty than the ranchman's flocks and herds seek the home range do the seals annually return to their breeding grounds where, under proper management, they can without injury to the parent stock be made to yield a profit equal to if not greater than that derived from the cattle of the plains or the sheep of the mountains.

THE SOUTHERN FUR SEAL AND ITS DESTRUCTION.

Despite these characteristics, which must have been apparent to the most ignorant and unobservant, what has been the course of events? Turning first to the fur seal of the south we find that as early as 1690 some little interest was manifested in its capture, but it was not until the close of the last century that the pursuit was begun in earnest. Hardy mariners, stimulated by the hope of sharing in the profits of the

[1] *From Bulletin United States Fish Commision, 1893, pp. 361–370.*

fur trade which the Russians had developed with the Chinese, searched out the resorts of the southern fur seal; ravaged them year after year, in season and out of season; slaughtered the helpless creatures with clubs on land regardless of age or sex; gathered a harvest of 16,000,000 or 17,000,000 skins, and by 1830 had practically destroyed, in the southern seas, this valuable fur-bearing animal. If all these resorts were in their original condition and under wise and prudent direction, they could easily supply to the fur trade annually something like a half a million skins, with corresponding advantage to an army of skilled artisans. As it is, indiscriminate butchery has left only the Lobos Islands rookeries at the mouth of the La Plata River and a few insignificant resorts at Cape Horn and the Cape of Good Hope, the total yearly yield of which is, as before stated, less than 15,000 skins. Such destruction is left absolutely without justification in the face of man's entire ability to maintain the fur seal rookeries at the highest possible limits permitted by the operation of nature's restrictions, or when depleted to develop them again. This is not idle speculation, but rests upon a firm foundation of fact furnished by the history of the fur-seal of the north.

THE NORTHERN FUR SEAL AND ITS RELATION TO THE SEAL-SKIN INDUSTRY.

The two great resorts of the northern fur seal are the Pribilof and Commander islands in Bering Sea. Robbens Reef, a rocky islet in the Okhotsk Sea, has a small rookery, and a few localities of minor importance are found along the Kurile Islands. While the Russians who first discovered these resorts prohibited all interference from outsiders, their own treatment of the seals was similar to that practiced by the sailors in the south. No attention was paid to sex, season, or period of procreation, and it was not long before the end came there just as it had done in the south. The Russians were taught by this severe lesson that the only way in which the rookeries could be restored and perpetuated was to protect the females from death and the breeding grounds from molestation. This course, accompanied by practically a suspension of killing during certain years, was rigidly adhered to, with the result that when the rookeries of the Pribilof Islands were turned over to the United States in 1867 their condition, instead of being one of exhaustion, approximated that which existed when they were first discovered. The truth of this will be more apparent when it is stated that in 1868, before the United States could assume and exercise control over its newly acquired possessions, nearly a quarter of a million skins were improperly taken from the islands of St. Paul and St. George by unauthorized persons without apparently producing any diminution of the numbers which came the following year.

Although there are but four of these northern localities, and Russian mismanagement from time to time played such havoc with them that the catch was an uncertain quantity, still they have contributed since their discovery between 5,000,000 and 6,000,000 skins to the fur trade, or about one-third as many as have been furnished by the southern resorts. From the time that the fur seal of the south ceased to be of commercial importance trade has relied upon these rookeries. Thanks to the more enlightened policy employed by the Russians, and adopted and improved upon by the United States, these rookeries of Bering Sea contributed to commerce for the twenty years ending with 1889 a uniform yearly quota of nearly 150,000 pelts, which formed the basis of and made possible the systematized seal-skin business of modern

times. As a raw commodity they sold for an average of $2,500,000 at the annual London trade sales, and the Pribilof quota yielded the Government of the United States in revenue more than the $7,200,000 originally paid for the entire Territory of Alaska. The value of raw seal skins is now represented by about $15 for skins taken at sea and $30 for Pribilof skins. At the present revenue rate, if it were now possible to take from the Pribilof Islands the former yearly quota, the Government income would be nearly $1,000,000 annually.

IMPORTANCE OF THE SEAL-SKIN INDUSTRY.

The seal-skin industry is of no slight importance, and its proportions are but roughly indicated by the first profit on the raw skins. These peltries must be gathered in remote regions; they form part of the transportation business of railroad and steamship lines; coopers must make casks for their shipment; they must pass through the hands of many laborers before they reach the 40 buyers in London who purchase them, and the 2,000 skilled artisans who convert them into fabrics suited to the use of trade; and when all this is done there must still be stores maintained and clerks employed in order that they may find their way to the wealthy consumers. The labor incident to the taking, transporting, manipulating, and disposing of these peltries demands the employment of thousands of persons each year, and when we recall the prices paid for these skins when converted into the garments dictated by fashion, it will readily be seen that it is an industry the ultimate value of which is represented by millions of dollars annually. Above all it is a peculiarly worthy industry, in that it gives occupation to many, while the profits come from the purses of those best able to pay them.

CAUSE OF THE DESTRUCTION OF THE NORTHERN FUR SEAL.

Some ten years ago there was put in operation on the American side of the Pacific Ocean an agency of destruction, the growth of which, if uninterrupted, promised to prove as effective as did the sailors' clubs upon the southern resorts. Its promise has been generously kept, and from its deadly though partially controlled effects the rookeries are now suffering. That agency was pelagic sealing, or the taking of seals at sea by means of weapons. The source of the injury is the indiscriminate killing. Whether this is practiced on land, as in the south, or at sea, as in the north, the outcome is the same. No animal which produces but a single offspring each year can long survive an attack which involves the death of the producing class, the females. I am aware that there is another side to this question, and that two great nations point each a finger at the other and say: "You did it." The subject-matter of that contention is only germane to such a paper as this in so far as it touches upon the career of the seal, and only to that extent will it be referred to.

England and Canada hold the theory (which, in justice to them, should be stated) that the decline of the northern rookeries was due to excessive killing on the islands, pelagic sealing being a factor of only secondary importance. If this theory meant that after pelagic sealing had made serious inroads upon the seal herds it was excessive killing to continue taking the annual quota of 100,000 skins, it would be a sound one, and the United States would be culpable to that extent, but England and Canada would not accept this limitation; they want *it to account for much more.* They fail, however, to sustain their

theory until they show by clearest proof that the decline of the rookeries began prior to the development of pelagic sealing, and also get rid of the awkward fact that for the first twelve or fifteen years there was no difficulty in securing the annual quota allowed by law. Why did this alleged decadence through excessive killing on land take so long to manifest itself? Certainly the evils of indiscrimination is not inherent in land killing; on the contrary, selection can be exercised at the rookeries as readily as it can be at the abattoir, and there is no more necessity for molesting the females than there would be for a farmer to ship all of his herd to Kansas City and have the selection of the killable males made at the stock yards. The briefest recital of the facts of seal life will make this plain.

THE FACTS OF SEAL LIFE.

The northern fur seals, unlike their southern relatives, are forced each year by Arctic cold and the necessity for food to leave their homes on the approach of winter and to seek the southern waters and the abundant fish supply along the continental shores. The migration routes of the Alaskan and Asiatic herds do not coalesce, nor do the seals intermingle. Late in April or early in May, depending upon the character of the season, the breeding males, bulls, or "seecatchie," first return to their resorts from this migration. About a month later the mature females or "matkie" begin to seek the breeding grounds, and between the time of arrival of these two classes the young males or "hollustchikie" are swimming in the water near the rookery fronts or hauling out upon the hauling grounds some distance away from the areas occupied by the mature seals. The young males are not permitted to gather upon the breeding grounds until, by reason of age and strength, they are able to maintain a position there.

Each old bull when he arrives in the spring selects and maintains, often by desperate combat, a little area upon which he hopes to establish his household. The male weighs four or five times as much as his consort, and, as is usually the case where the male preponderates in size, they are extremely polygamous. Their vitality and virility is almost beyond belief. For eighty or ninety days, while they are making secure their position, and while guarding and presiding over their families or "harems," they are debarred from both food and water. When the season of propagation is past they again betake themselves to the sea, and the breeding grounds are given up to the intermingling of young males, females, and pups, but during that eighty or ninety days the immature males from 1 to 5 years of age have been compelled to consort together upon the hauling grounds, and thus there is given an opportunity without in any way interfering with the course of events upon the breeding grounds, to drive away, select, and slaughter such of these young males as will furnish desirable pelts. These are the only skins shipped from the islands.

Can anyone successfully maintain that in the case of polygamous animals the taking of the surplus male life and reserving the females can destroy the herd? If this can be demonstrated, then our stock-raisers are at fault, and the evidence derived from Russian management goes for naught.

THE FACTS OF PELAGIC SEALING.

Before the breath of life can be breathed into this theory of decadence through excessive killing on the islands there must be removed from

the record books certain well-established facts concerning pelagic sealing. It will be necessary to dispose of the fact that while in 1878 there was but 1 vessel engaged in pelagic sealing, the number steadily increased until in 1892 there were 122 to follow on the migration tracks of the herds, to harry them eight months out of the twelve, and, if permitted, to accompany them to and even upon their chosen resorts. There must also be a successful refutation of the fact that there is a loss of at least 10 per cent inherent in the methods of taking seals at sea; that pelagic sealing strikes at the very life of the rookeries, by killing 75 or 80 per cent of the females, more than half of which are mothers whose death involves that of their unborn offspring; and that the period of gestation being nearly twelve months, a mother killed in Bering Sea means that three seal lives may pay the penalty.

It is equally important to the maintenance of this theory that there be an elimination of the fact that during the four seasons, ending with the past one of 1893, there were taken on the Pribilof Islands only a total of 50,000 skins of young males, while during that same period there were actually marketed by the sealers over 200,000 skins, which represented only about half the injury done the seal herds, an injury falling heaviest upon the producing class, the females. For four years there has been practically a closed time on these islands, and pelagic sealing has had full swing in the North Pacific. The rookeries have not improved under these conditions, and until the records of the real cause of destruction stand impeached it is idle to offer obscure and improbable explanations for the present condition of seal life.

It has only been profitable to follow this question of the cause of the decadence to indicate what might be expected from pelagic sealing. Whenever and to whatever extent carried on, its deadly effects are certain and continuous, the amount of injury being limited only by the magnitude of the enterprise. Improprieties on land can be guarded against, but the disastrous consequences of pelagic sealing are inherent to the business and are beyond man's control. They can be lessened, but only through the curtailment of the number of seals taken. The injurious effect upon the herd, while proportionately less, remains a constant factor.

In following the career of an animal possessing such capacity for self-perpetuation and ready adaptability to the uses of man, the student of natural history or of economics is struck by the wanton and needless destruction which pursues it wherever found. As to its future he turns, for what comfort he may be able to extract, to the decision of that court of recent if not last resort—the Paris Tribunal of Arbitration.

THE PARIS TRIBUNAL OF ARBITRATION.

The causes which led to the arbitration are known to all. For some years the Alaskan fur seal, when on its migration route, had been the eagerly sought quarry of the pelagic hunters. This route, which by reason of its vast extent and proximity to inhabited shores makes this herd especially vulnerable to attack, extends from the Pribilof Islands southward through the passes of the Aleutian chain, expands in the broad Pacific, but ultimately brings the seals in more compact masses to the North American Coast, and thence along its shores, back through the passes, to the Pribilof Islands again. Realizing the peril of the rookeries, the Government of the United States attempted to partially protect them by seizing sealing schooners in Bering Sea. Each year it was thought that at least so far as these waters were con-

cerned the danger would cease, but each year it increased as the vessels multiplied and the skill and knowledge of the sealers became greater and was ultimately extended to the Asiatic herd which frequents the Russian or Commander Islands. The continued seizing of schooners by the United States met with remonstrances on the part of Canada and England, and finally, after much irritation and heat, became the subject of diplomatic negotiations, the peaceful outcome of which was the Paris Tribunal of Arbitration.

Three duties were intrusted to the Tribunal of Arbitration: It was to settle certain jurisdictional questions, to decide the question of property rights, and in the event of the matter being left in such shape that the concurrence of Great Britain was necessary to establish regulations for the purpose of protecting and preserving the fur seal, it was to frame such regulations as would be applicable outside of the jurisdiction of the respective Governments and to indicate the nonterritorial waters over which these regulations should extend. As it is not important in this connection to consider the jurisdictional phases of the case there will be taken up at once the property question and the regulations—the two points that immediately concern us; the former from the standpoint of general interest, and the latter by reason of their intimate relation to the future of the seals.

THE AMERICAN POSITION.

The able representatives of the United States took the position that the tribunal was bound by no precedents, and possessed, by virtue of its very origin, a creative as well as a judicial function. They urged upon the tribunal the taking of high ground and the settlement of the question upon broad and comprehensive principles. They pointed out that man, by means of invention, was rapidly extending his dominion over the water, as he had over the land, and, by employing methods which were not even dreamed of when many existing municipal and international laws were enacted, threatened the very existence of many creatures useful to man. Turning from the citations of voluminous authorities vindicating the justness of their claim of property right in the seals and in the industry, they pleaded with sturdy argument and great eloquence that the tribunal would fail of its high duty did it not lend its aid to such an extension of the world's idea of property right as was needed to meet the demands of the advancing age. They asked that the narrow ground be not taken that this great tribunal was called into existence solely for the purpose of settling a dispute between two nations, but that it was given an opportunity and was vested with the power to make a substantial contribution to international law, and that its verdict, while disposing of the immediate matter in dispute, should be such a formulation, upon broader lines, of our conception of rights of property and of protection as would be of value to all mankind, irrespective of nations. They pointed out that the material progress of the world was based upon the fundamental principle of ownership, and that the most effective way of preventing the commercial annihilation of certain great groups of creatures was by lodging in the nation best qualified by its geographic position to protect them a custodianship, to be exercised over them for the benefit of all. It was shown that the adoption of this principle would dispose of the question of the relation of other governments to the subject; would make possible the rehabilitation of many of the seal rookeries of the south; that it would protect such industries as the coral and pearl fisheries, and that it would be

useful in controlling the rapid inroads man's ingenuity is now making on the denizens of the sea. In short, that it would be a direct, useful, and common-sense way of settling the whole matter.

THE BRITISH POSITION.

With equal skill of argument and eloquence of address the advocates of Great Britain and Canada held that the tribunal possessed but one function—that its duty was to declare the law and not to make it; but that, whatever its function might be as an international body, it was not vested with the power to make international law, but must keep to the straight and narrow way of settling a contention between two nations and adjusting two conflicting methods of catching seals. They asked that the tribunal provide for the continuation of pelagic sealing under the most favorable conditions consistent with carrying out the terms of the treaty. True, nothing was said in the treaty about preserving the business of pelagic sealing, but before so patient and generous a court it was not difficult to confuse the issue of preserving the seals and continuing pelagic sealing and to take up a large share of the proceedings with pleadings in behalf of the latter. They demanded that the question of property right be settled from the standpoint that the seals were wild animals, which man could only reduce to possession by destroying. They insisted that the law relating to wild animals, regardless of its origin, had been accepted by nations as the years ran on; it was very old law and very good law; but, whether good or bad, it was *the* law, and from its teachings the tribunal must not allow itself to be enticed away by the seductive citations and insidious arguments of learned counsel on the other side. There must be no making of laws to suit new conditions; the old stand-bys must be adhered to, whether applicable or not. They urged that the seals being wild animals, the United States had done nothing to encourage or develop in them the animum revertendi—the inclination to return to their homes, as in the case of bees and similar creatures—and thus had lost their claim to a property in them, and if the world or a part of it desired to turn out in boats and to destroy the industry by shooting the seals in the water they had a perfect right to do so, for a wild animal was free to all. No matter if seal mothers roaming the sea for food did fall before the gun or spear of the pelagic hunter and their helpless pups starve on the rookeries, the hand of destruction must not be stayed, for the United States had no rights anyone was bound legally to respect when the seals were 3 miles off shore, and humanitarian considerations had no place in the controversy. They insisted that the tribunal had no authority in law to declare a property right in the seals or in the industry, but if the tribunal contemplated disregarding the law and settling this question on lines of their own choosing they must refrain from doing so, because it would interfere with that wonderful invention, the immemorial right on the high seas, an interference nations not only would not brook, but which they would actively resent.

THE TRIBUNAL'S DECISION.

The tribunal, true to the conservatism of the Old World, accepted this interpretation of their powers, recognized the potency of venerable legal relics, assented to the arguments of the counsel for Great Britain and Canada based thereon, and contented itself with deciding that the *United States* had no right of protection or property in the fur seals.

THE REGULATIONS.

The next task to which the tribunal addressed itself was the framing of regulations. These regulations furnish the last hope for the preservation of the fur seal as a commercial commodity. It is not probable that any other nations having seal interests will be content with less than the United States secured, nor is it likely they will obtain more, and thus they represent the measure of protection all seals are likely to receive in the future.

After listening to an enormous mass of testimony—some good, some bad, and some very indifferent—concerning seal life, the tribunal proposes to preserve the Alaskan branch of the northern fur seal by prohibiting sealing within a zone of 60 miles around the Pribilof Islands by establishing a closed time, or time of no killing at sea, from May 1 to July 31; by permitting only sailing vessels to engage in the business of seal hunting, and requiring them to carry a distinctive flag, to take out a special license, and to keep a daily record of the catch and the sex of the seals taken, these records to be communicated to each of the two Governments at the close of the sealing season; by limiting the weapons of capture to shotguns in the North Pacific and spears in Bering Sea, and by requiring the two Governments to take such measures as will determine whether the hunters are fit to handle with sufficient skill the weapons by means of which the seals are to be captured. These regulations, which are to remain in force until they have been in whole or in part abolished or modified by common agreement between the Governments of the United States and Great Britain, are to be submitted every five years to a new examination, so as to enable both Governments to consider whether, in the light of past experience, there is occasion for any modification of them.

The three prime points in the regulations are: The zone around the islands; the closed time of three months injected into the middle of the sealing season, thus breaking it up, and the restriction of the use of firearms to the North Pacific.

First as to the zone: If there was any one fact clearly established by the testimony of the pelagic sealers themselves and official experts it was that in the summer season great numbers of seals, and especially females, are found at long distances from the islands of Bering Sea, distances two or three times greater than that of the protecting zone provided by the regulations. Now, as the object was to preserve the fur seals, it is proper to assume that the tribunal, prompted by a desire to protect them, and acting in good faith, established such a zone as they believed would practically prohibit the attack of the pelagic sealer; but if this was so, then mere amount of distance was immaterial, and in view of the fact that incessant fogs brood over the waters of Bering Sea during the summer season, rendering it difficult to tell when a vessel is within or without a zone, the limit of which can not be marked, why not at once adopt that natural and well-defined boundary line, the Aleutian chain? Just here arises the question: When vessels are seized, whose word shall be accepted as to the locality of seizure—the pelagic sealer's or the seizing officer's? Does not this uncertainty, having as it does an important bearing on the question of conviction, weaken the regulations restraining influence on pelagic sealing? Aside from questions of protection it seems to me that this part of the decision will tend to increase dispute and bitterness rather than to diminish it.

The adoption of the closed time means the recognition on the part of

the tribunal that the destruction by the pelagic sealer has been excessive, and the cutting off of one month of the sealing season in Bering Sea clearly shows that it realized the danger to the herd from allowing sealing there. Why, then, was sealing not prohibited altogether in those waters? Is the danger less in August and a portion of September? The seals are still going long distances from the islands and the sealer can continue his work until stopped by the September gales. Bering Sea is the focal point, the great massing ground of seal life, and the seals are more readily taken there than anywhere else. In 1891 the catch of the Canadian fleet in the North Pacific was a little over 21,000 seals, and before the modus vivendi could be enforced a portion of the fleet sealed from three to five weeks on the American side of Bering Sea, and with fewer vessels and with fewer small boats they took in that time as many seals as they had previously secured in the Pacific. During the three years ending with and including 1891 the Canadian fleet (and I only quote from Canadian records, because they are so reliable) took, in five months, in the North Pacific, an average of 567 skins per vessel; with ten vessels less, they took in Bering Sea 727 skins per vessel in about two and one-half months.

The proposed regulations still allow at least five weeks' sealing in Bering Sea; but, say the regulations, the hunters can only use spears in Bering Sea, thereby intimating that spears are less effective than the shotguns allowed in the North Pacific, and that an additional safeguard has therefore been provided in Bering Sea. Just why the shotgun is pernicious in Bering Sea and is not in the North Pacific is not indicated; but if we turn to the testimony of the Northwest Coast Indians, who ship on the schooners and accompany them to Bering Sea, we find that they claim that they can do better work with the spear than with the shotgun. The latter makes the game wild, while the former does not. The spear makes no noise, and they are thus able to take seal after seal as they sleep on the water, and get all in sight, while at the sound of a gun's discharge the comrades of the captured or wounded seal swim away.

It is evident from an inspection of these regulations as a whole that the tribunal, taking into account the interests of both nations, endeavored to frame measures which, while protecting the seals, would permit the continuation of pelagic sealing. This seems to me a task the accomplishment of which is an impossibility. The evils of pelagic sealing appear to have been clearly recognized by the tribunal, but instead of adopting prohibitive measures it took the middle course of throwing some protection around the seals, and while at the same time appearing to concede something to the pelagic sealers, made the conditions just sufficiently hard as to prevent them from engaging successfully in the business. It is admitted that these regulations possess value in limiting and discouraging pelagic sealing, but their inherent weakness is that while they now seem to possess some deterring power, changed conditions may at any time arise which will negative their influence and offer inducements sufficient to enable the sealers to again engage in this business on a large and injurious scale. This contingency is not so remote as may appear at first sight. In 1889 the average price paid in Victoria for skins taken at sea was $6.83; in 1890 it had risen to $10.70; in 1891 it was $15. In 1889 the cost of each skin in wages was from $2 to $3; in 1890 and 1891 it was $3.50; in 1892 it was $4; in other words, an advancing price for both master and hunter.

Now, it is evident that it will be some time before the Pribilof Islands can very greatly increase their annual output of skins. The maximum

output of the Commander Islands has been reached, and probably will have to be decreased in the future. There must be through these regulations some curtailment of the contribution of the sealing schooners, and the result of all this will be that seal skins will demand a higher price. Should that price reach a figure which will compensate for the obstacles which the regulations place in the way of the pelagic sealer, then we will have the changed conditions referred to, and pelagic sealing with its attendant evils will go on as before. If there is doubt in the minds of anyone upon this point it is only necessary to turn to the history of the sea otter, which, though nearly exterminated, is as eagerly sought after to-day as it ever was, simply because the ever-increasing price the trade is willing to pay for its skin still compensates for the small numbers now taken. There is no reason to believe that the career of the fur seal will be different from that of the sea otter.

Another possible source of changed conditions lies in the regulations themselves, for they provide, as we have seen, for their own modification every five years, and the pressure will come heaviest from the pelagic sealers' side of the case. Indeed, the regulations require that each pelagic sealer—an interested party—shall keep records which are to be made available when the question of modifications of the regulations arises. Now, while there never was a more fearless and courageous set of men than these pelagic sealers, it will be something entirely new in their history if their records do not appeal in the strongest possible terms for a modification of the regulations in their favor.

The final question that arises in regard to these regulations is, will they, as they now stand, ever be put in operation? The interested powers have yet to agree upon measures for giving effect to them. Is it likely that, when a neutral tribunal found the making of regulations so tedious and difficult, the interested powers will be able without interminable delay and possibly irreconcilable conflict to agree upon "concurrent measures" putting them in force? England has won on the great law points of the case, but these regulations are objectionable to Canada, for they bear somewhat heavily upon pelagic sealing; and these "concurrent measures" offer tempting fighting ground for securing their modification in favor of the Dominion.

Under the circumstances it is only to be expected that the arts of diplomacy will be vigorously exercised in that direction. There is but one course, however, for the United States to pursue—permit no modifications, stand squarely for the prompt carrying out of these regulations, and let time reveal how much value they possess for protecting the seal herd. England will champion no plan of greater protection; she has all to gain and nothing to lose from delay, and it will require all the energy and firmness of the Executive to put effectively in force the regulations as adopted by the tribunal.

CONCLUSIONS.

After more than two years of close study of this question it is my conviction that the only way in which the world can secure the largest benefit commercially from the fur seal wherever found is by taking the surplus immature males upon land under the most favorable conditions suggested by experience; that securing seals by any other methods introduces the fatal element of indiscrimination; that the life of the herd is jeopardized in proportion to the number of females killed; that the injury inflicted on the northern herds by pelagic sealing increases from January to August, grows greater as Bering Sea is approached, and

culminates in those waters; that the shotgun and spear are both deadly, the latter by reason of its noiseless efficiency, the former by reason of its ready use by all classes, and that the disposition of this question on the basis of adjusting two conflicting interests is futile and illogical, but material issues are not alone involved; it presents biologic features as well and has to do with forces of nature beyond man's control.

Regulations can not be framed by human ingenuity which will preserve the seal herds in their greatest possible proportions and permit the continuation of successful pelagic sealing. It would be reconciling the irreconcilable. It would be accomplishing a feat equal to that of making two bodies occupy the same space at the same time. Either the regulations will be prohibitive in their operation—in which case it would be more straightforward to make them so in the first instance—or, if allowing successful pelagic sealing, they will be valueless in preventing the extermination of the seal. In general it may be said that no pelagic sealing can be carried on which is not inherently and uncontrollably injurious to the life of the seal herd—the amount of injury being proportionate to the magnitude of the attack.

AWARD OF THE TRIBUNAL OF ARBITRATION CONSTITUTED UNDER THE TREATY CONCLUDED AT WASHINGTON THE 29TH OF FEBRUARY, 1892, BETWEEN THE UNITED STATES OF AMERICA AND HER MAJESTY THE QUEEN OF THE UNITED KINGDOM OF GREAT BRITAIN AND IRELAND.

[English version.]

Whereas, by a treaty between the United States of America and Great Britain, signed at Washington, February 29, 1892, the ratifications of which by the Governments of the two countries were exchanged at London on May 7, 1892, it was, amongst other things, agreed and concluded that the questions which had arisen between the Government of the United States of America and the Government of Her Britannic Majesty, concerning the jurisdictional rights of the United States in the waters of Bering Sea, and concerning also the preservation of the fur seal in or habitually resorting to the said sea, and the rights of the citizens and subjects of either country as regards the taking of fur seals in or habitually resorting to the said waters, should be submitted to a tribunal of arbitration to be composed of seven arbitrators, who should be appointed in the following manner, that is to say: Two should be named by the President of the United States; two should be named by Her Britannic Majesty; His Excellency the President of the French Republic should be jointly requested by the high contracting parties to name one; His Majesty the King of Italy should be so requested to name one; His Majesty the King of Sweden and Norway should be so requested to name one; the seven arbitrators to be so named should be jurists of distinguished reputation in their respective countries, and the selecting powers should be requested to choose, if possible, jurists who are acquainted with the English language;

And whereas it was further agreed by Article II of the said treaty that the arbitrators should meet at Paris within twenty days after the delivery of the counter cases mentioned in Article IV, and should proceed impartially and carefully to examine and decide the questions which had been or should be laid before them as in the said treaty provided on the part of the Governments of the United States and of Her Britannic Majesty, respectively, and that all questions considered by

the tribunal, including the final decision, should be determined by a majority of all the arbitrators;

And whereas by Article VI of the said treaty, it was further provided as follows:

In deciding the matters submitted to the said arbitrators, it is agreed that the following five points shall be submitted to them in order that their award shall embrace a distinct decision upon each of said five points, to wit:

1. What exclusive jurisdiction in the sea now known as Bering Sea, and what exclusive rights in the seal fisheries therein, did Russia assert and exercise prior and up to the time of the cession of Alaska to the United States?

2. How far were these claims of jurisdiction as to the seal fisheries recognized and conceded by Great Britain?

3. Was the body of water now known as Bering Sea included in the phrase Pacific Ocean, as used in the treaty of 1825 between Great Britain and Russia; and what rights, if any, in Bering Sea were held and exclusively exercised by Russia after said treaty?

4. Did not all the rights of Russia, as to jurisdiction and as to the seal fisheries in Bering Sea east of the water boundary, in the treaty between the United States and Russia of the 30th of March, 1867, pass unimpaired to the United States under that treaty?

5. Has the United States any right, and if so, what right, of protection or property in the fur seals frequenting the islands of the United States in Bering Sea when such seals are found outside the ordinary 3-mile limit?

And whereas, by Article VII of the said treaty, it was further agreed as follows:

If the determination of the foregoing questions as to the exclusive jurisdiction of the United States shall leave the subject in such position that the concurrence of Great Britain is necessary to the establishment of regulations for the proper protection and preservation of the fur seal in, or habitually resorting to, Bering Sea, the arbitrators shall then determine what concurrent regulations, outside the jurisdiction limits of the respective Governments, are necessary, and over what waters such regulations should extend;

The high contracting parties furthermore agree to cooperate in securing the adhesion of other powers to such regulations;

And whereas, by Article VIII of the said treaty, after reciting that the high contracting parties had found themselves unable to agree upon a reference which should include the question of the liability of each for the injuries alleged to have been sustained by the other, or by its citizens, in connection with the claims presented and urged by it, and that "they were solicitious that this subordinate question should not interrupt or longer delay the submission and determination of the main questions," the high contracting parties agreed that "either of them might submit to the arbitrators any question of fact involved in said claims and ask for a finding thereon, the question of the liability of either Government upon the facts found, to be the subject of further negotiation;

And whereas the President of the United States of America named the Hon. John M. Harlan, Justice of the Supreme Court of the United States, and the Hon. John T. Morgan, Senator of the United States, to be two of the said arbitrators, and Her Britannic Majesty named the Right Hon. Lord Hannen and the Hon. Sir John Thompson, minister of justice and attorney-general for Canada, to be two of the said arbitrators, and His Excellency the President of the French Republic named the Baron de Courcel, senator, ambassador of France, to be one of the said arbitrators; and His Majesty the King of Italy named the Marquis Emilio Visconti Venosta, former minister of foreign affairs and senator of the Kingdom of Italy, to be one of the said arbitrators; and His Majesty the King of Sweden and Norway named Mr. Gregers Gram, minister of state, to be one of the said arbitrators;

And whereas we, the said arbitrators so named and appointed, hav-

ing taken upon ourselves the burden of the said arbitration, and having duly met at Paris, proceeded impartially and carefully to examine and decide all the questions submitted to us, the said arbitrators, under the said treaty, or laid before us as provided in the said treaty on the part of the Governments of Her Britannic Majesty and the United States, respectively;

Now we, the said arbitrators, having impartially and carefully examined the said questions, do in like manner by this our award decide and determine the said questions in the manner following; that is to say, we decide and determine as to the five points mentioned in Article VI as to which our award is to embrace a distinct decision upon each of them:

As to the first of the said five points, we, the said Baron de Courcel, Mr. Justice Harlan, Lord Hannen, Sir John Thompson, Marquis Visconti Venosta, and Mr. Gregers Gram, being a majority of the said arbitrators, do decide and determine as follows:

By the ukase of 1821 Russia claimed jurisdiction in the sea now known as Bering Sea to the extent of 100 Italian miles from the coast and islands belonging to her; but, in the course of the negotiations which led to the conclusion of the treaties of 1824 with the United States and and of 1825 with Great Britain, Russia admitted that her jurisdiction in the said sea should be restricted to the reach of cannon shot from shore, and it appears that from that time up to the time of the cession of Alaska to the United States Russia never asserted in fact or exercised any exclusive jurisdiction in Bering Sea or any exclusive rights in the seal fisheries therein beyond the ordinary limit of territorial waters.

As to the second of the said five points, we, the said Baron de Courcel, Mr. Justice Harlan, Lord Hannen, Sir John Thompson, Marquis Visconti Venosta, and Mr. Gregers Gram, being a majority of the said arbitrators, do decide and determine that Great Britain did not recognize or concede any claim upon the part of Russia to exclusive jurisdiction as to the seal fisheries in Bering Sea outside of ordinary territorial waters.

As to the third of the said five points, as to so much thereof as requires us to decide whether the body of water now known as Bering Sea was included in the phrase "Pacific Ocean" as used in the treaty of 1825 between Great Britain and Russia, we, the said arbitrators, do unanimously decide and determine that the body of water now known as Bering Sea was included in the phrase "Pacific Ocean" as used in the said treaty.

And as to so much of the said third point as requires us to decide what rights, if any, in Bering Sea were held and exclusively exercised by Russia after the said treaty of 1825, we, the said Baron de Courcel, Mr. Justice Harlan, Lord Hannen, Sir John Thompson, Marquis Visconti Venosta, and Mr. Gregers Gram, being a majority of the said arbitrators, do decide and determine that no exclusive rights of jurisdiction in Bering Sea and no exclusive rights as to the seal fisheries therein were held or exercised by Russia outside of ordinary territorial waters after the treaty of 1825.

As to the fourth of the said five points, we, the said arbitrators, do unanimously decide and determine that all the rights of Russia as to jurisdiction and as to the seal fisheries in Bering Sea east of the water boundary, in the treaty between the United States and Russia of the 30th March, 1867, did pass unimpaired to the United States under the *said treaty.*

As to the fifth of the said five points, we, the said Baron de Courcel, Lord Hannen, Sir John Thompson, Marquis Visconti Venosta, and Mr. Gregers Gram, being a majority of the said arbitrators, do decide and determine that the United States has not any right of protection or property in the fur seals frequenting the islands of the United States in Bering Sea when such seals are found outside the ordinary 3-mile limit.

And whereas the aforesaid determination of the foregoing questions as to the exclusive jurisdiction of the United States, mentioned in Article VI, leaves the subject in such a position that the concurrence of Great Britain is necessary to the establishment of regulations for the proper protection and preservation of the fur seals in or habitually resorting to Bering Sea, the tribunal having decided by a majority as to each article of the following regulations, we, the said Baron de Courcel, Lord Hannen, Marquis Visconti Venosta, and Mr. Gregers Gram, assenting to the whole of the nine articles of the following regulations, and being a majority of the said arbitrators, do decide and determine in the mode provided by the treaty that the following concurrent regulations outside the jurisdictional limits of the respective Governments are necessary, and that they should extend over the waters hereinafter mentioned, that is to say:

REGULATIONS.

Article 1.

The Governments of the United States and of Great Britain shall forbid their citizens and subjects, respectively, to kill, capture, or pursue at any time and in any manner whatever the animals commonly called fur seals within a zone of 60 miles around the Pribilof Islands, inclusive of the territorial waters.

The miles mentioned in the preceding paragraph are geographical miles, of 60 to a degree of latitude.

Article 2.

The two Governments shall forbid their citizens and subjects, respectively, to kill, capture, or pursue, in any manner whatever, during the season extending each year from the 1st of May to the 1st of July, both inclusive, the fur seals on the high sea, in the part of the Pacific Ocean, inclusive of Bering Sea, which is situated to the north of the thirty-fifth degree of north latitude and eastward of the one hundred and eightieth degree of longitude from Greenwich, till it strikes the water boundary described in Article I of the treaty of 1867 between the United States and Russia, and following that line up to Bering Straits.

Article 3.

During the period of time and in the waters in which the fur-seal fishing is allowed, only sailing vessels shall be permitted to carry on or take part in fur-seal fishing operations. They will, however, be at liberty to avail themselves of the use of such canoes or undecked boats, propelled by paddles, oars, or sails as are in common use as fishing boats.

Article 4.

Each sailing vessel authorized to fish for fur seals must be provided with a special license issued for that purpose by its Government, and shall be required to carry a distinguishing flag, to be prescribed by its Government.

ARTICLE 5.

The masters of the vessels engaged in fur-seal fishing shall enter accurately in their official log book the date and place of each fur-seal fishing operation, and also the number and sex of the seals captured upon each day. These entries shall be communicated by each of the two Governments to the other at the end of each fishing season.

ARTICLE 6.

The use of nets, firearms, and explosives shall be forbidden in the fur-seal fishing. This restriction shall not apply to shotguns when such fishing takes place outside of Bering Sea during the season when it may be lawfully carried on.

ARTICLE 7.

The two Governments shall take measures to control the fitness of the men authorized to engage in fur-seal fishing. These men shall have been proved fit to handle with sufficient skill the weapons by means of which this fishing may be carried on.

ARTICLE 8.

The regulations contained in the preceding articles shall not apply to Indians dwelling on the coasts of the territory of the United States or of Great Britain, and carrying on fur-seal fishing in canoes or undecked boats not transported by paddles, oars, or sails, and manned by not more than five persons each in the way hitherto practiced by the Indians, provided such Indians are not in the employment of other persons, and provided that, when so hunting in canoes or undecked boats, they shall not hunt fur seals outside of territorial waters under contract for the delivery of the skins to any person.

This exemption shall not be construed to affect the municipal law of either country, nor shall it extend to the waters of Bering Sea or the waters of the Aleutian Passes.

Nothing herein contained is intended to interfere with the employment of Indians as hunters or otherwise in connection with fur-sealing vessels, as heretofore.

ARTICLE 9.

The concurrent regulations hereby determined with a view to the protection and preservation of the fur seals shall remain in force until they have been in whole or in part abolished or modified by common agreement between the Governments of the United States and of Great Britain.

The said concurrent regulations shall be submitted every five years to a new examination, so as to enable both interested Governments to consider whether in the light of past experience there is occasion for any modification thereof.

And whereas the Government of Her Britannic Majesty did submit to the Tribunal of Arbitration by Article VIII of the said treaty certain questions of fact involved in the claims referred to in said Article VIII, and did also submit to us, the said tribunal, a statement of the said facts, as follows, that is to say:

FINDINGS OF FACT PROPOSED BY THE AGENT OF GREAT BRITAIN AND AGREED TO AS PROVED BY THE AGENT FOR THE UNITED STATES AND SUBMITTED TO THE TRIBUNAL OF ARBITRATION FOR ITS CONSIDERATION.

1. That the several searches and seizures, whether of ships or goods, and the sev*eral arrests of* masters and crews, respectively, mentioned in the schedule to the

British case, pages 1 to 60, inclusive, were made by the authority of the United States Government. The questions as to the value of the said vessels or their contents, or either of them, and the question as to whether the vessels mentioned in the schedule to the British case, or any of them, were wholly or in part the actual property of the citizens of the United States have been withdrawn from and have not been considered by the tribunal, it being understood that it is open to the United States to raise these questions or any of them, if they think fit, in any future negotiations as to the liability of the United States Government to pay the amounts mentioned in the schedule of the British case.

2. That the seizures aforesaid, with the exception of the *Pathfinder*, seized at Neah Bay, were made in Bering Sea at the distances from shore mentioned in the schedule annexed hereto, marked C.

3. That the said several searches and seizures of vessels were made by public armed vessels of the United States, the commanders of which had, at the several times when they were made, from the Executive Department of the Government of the United States, instructions, a copy of one of which is annexed hereto, marked A, and that the others were, in all substantial respects, the same; that in all the instances in which proceedings were had in the district courts of the United States resulting in condemnation, such proceedings were begun by the filing of libels, a copy of one of which is annexed hereto, marked B, and that the libels in the other proceedings were in all substantial respects the same; that the alleged acts or offenses for which said several searches and seizures were made in each case were done or committed in Bering Sea at the distances from shore aforesaid; and that in each case in which sentence of condemnation was passed, except in those cases when the vessels were released after condemnation, the seizure was adopted by the Government of the United States; and in those cases in which the vessels were released the seizure was made by the authority of the United States; that the said fines and imprisonments were for alleged breaches of the municipal laws of the United States, which alleged breaches were wholly committed in Bering Sea at the distances from the shore aforesaid.

4. That the several orders mentioned in the schedule annexed hereto and marked G, warning vessels to leave or not to enter Bering Sea, were made by public armed vessels of the United States, the commanders of which had, at the several times when they were given, like instructions as mentioned in finding 3, and that the vessels so warned were engaged in sealing or prosecuting voyages for that purpose, and that such action was adopted by the Government of the United States.

5. That the district courts of the United States in which any proceedings were had or taken for the purpose of condemning any vessel seized, as mentioned in the schedule to the case of Great Britain, pages 1 to 60, inclusive, had all the jurisdiction and powers of courts of admiralty, including the prize jurisdiction, but that in each case the sentence pronounced by the court was based upon the grounds set forth in the libel.

ANNEX A.

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, April 21, 1886.

SIR: Referring to Department letter of this date, directing you to proceed with the revenue steamer *Bear*, under your command, to the seal islands, etc., you are hereby clothed with full power to enforce the law contained in the provisions of section 1956 of the United States Revised Statutes, and directed to seize all vessels and arrest and deliver to the proper authorities any or all persons whom you may detect violating the law referred to, after due notice shall have been given.

You will also seize any liquors or firearms attempted to be introduced into the country without proper permit, under the provisions of section 1955 of the Revised Statutes, and the proclamation of the President dated February 4, 1870.

Respectfully, yours,

C. S. FAIRCHILD, *Acting Secretary.*

Capt. M. A. HEALY,
Commanding Revenue Steamer Bear, San Francisco, Cal.

ANNEX B.

In the district court of the United States for the District of Alaska—August special term, 1886.

To the Hon. LAFAYETTE DAWSON, *Judge of said District Court:*

The libel of information of M. D. Ball, attorney for the United States for the District of Alaska, who prosecutes on behalf of said United States, and being present

here in court in his proper person, in the name and on behalf of said United States, against the schooner *Thornton*, her tackle, apparel, boats, cargo, and furniture, and against all persons intervening for their interest therein, in a cause of forfeiture, alleges and informs as follows:

That Charles A. Abbey, an officer in the Revenue-Marine Service of the United States, and on special duty in the waters of the District of Alaska, heretofore, to wit, on the 1st day of August, 1886, within the limits of Alaska Territory, and in the waters thereof, and within the civil and judicial District of Alaska, to wit, within the waters of that portion of Bering Sea belonging to the said district, on waters navigable from the sea by vessels of 10 or more tons burden, seized the ship or vessel commonly called a schooner, the *Thornton*, her tackle, apparel, boats, cargo, and furniture, being the property of some person or persons to the said attorney unknown, as forfeited to the United States, for the following causes:

That the said vessel or schooner was found engaged in killing fur seal within the limits of Alaska Territory, and in the waters thereof, in violation of section 1956 of the Revised Statutes of the United States.

And the said attorney saith that all and singular the premises are and were true, and within the admiralty and maritime jurisdiction of this court, and that by reason thereof and by force of the statutes of the United States in such cases made and provided, the aforementioned and described schooner or vessel, being a vessel of over 20 tons burden, her tackle and apparel, boats, cargo, and furniture, became forfeited to the use of the said United States, and that said schooner is now within the district aforesaid.

Wherefore the said attorney prays the usual process and monition of this honorable court issue in this behalf, and that all persons interested in the before-mentioned and described schooner or vessel may be cited in general and special to answer the premises, and all due proceedings being had, that the said schooner or vessel, her tackle, apparel, boats, cargo, and furniture may, for the cause aforesaid, and others appearing, be condemned by the definite sentence and decree of this honorable court, as forfeited to the use of the said United States, according to the form of the statute of the said United States in such cases made and provided.

M. D. BALL,
United States District Attorney for the District of Alaska.

ANNEX C.

The following table shows the names of the British sealing vessels seized or warned by the United States revenue cruisers, 1886-1890, and the approximate distance from land when seized. The distances assigned in the cases of the *Carolena*, *Thornton*, and *Onward* are on the authority of the United States Naval Commander Abbey (see Senate Ex. Doc. No. 106, pp. 20, 30, 40, Fiftieth Congress, second session). The distances assigned in the cases of the *Anna Beck*, *W. P. Sayward*, *Dolphin*, and *Grace* are on the authority of Captain Shepard, United States Revenue Marine (Blue Book, United States, No. 2, 1890, pp. 80-82. See Appendix, Vol. III).

Name of vessel.	Date of seizure.	Approximate distance from land when seized.	United States vessel making seizures.
Carolena	Aug. 1, 1886	75 miles	Corwin.
Thornton	do	70 miles	Do.
Onward	Aug. 2, 1886	115 miles	Do.
Favourite	do	Warned by Corwin in about same position as Onward.	
Anna Beck	July 2, 1887	66 miles	Rush.
W. P. Sayward	July 9, 1887	59 miles	Do.
Dolphin	July 12, 1887	40 miles	Do.
Grace	July 17, 1887	96 miles	Do.
Alfred Adams	Aug. 10, 1887	62 miles	Do.
Ada	Aug. 25, 1887	15 miles	Bear.
Triumph	Aug. 4, 1887	Warned by Rush not to enter Bering Sea	
Juanita	July 31, 1889	66 miles	Rush.
Pathfinder	July 29, 1889	50 miles	Do.
Triumph	July 11, 1889	Ordered out of Bering Sea by Rush. (?) As to position when warned.	
Black Diamond	do	35 miles	Do.
Lily	Aug. 6, 1889	66 miles	Do.
Ariel	July 30, 1889	Ordered out of Bering Sea by Rush	
Kate	Aug. 13, 1889	do	
Minnie	July 15, 1889	65 miles	Do.
Pathfinder	Mar. 27, 1890	Seized in Neah Bay. (?)	Corwin.

And whereas the Government of Her Britannic Majesty did ask the said arbitrators to find the said facts as set forth in the said statement, and whereas the agent and counsel for the United States Government thereupon in our presence informed us that the said statement of facts was sustained by the evidence, and that they had agreed with the agent and counsel for Her Britannic Majesty that we, the arbitrators, if we should think fit so to do, might find the said statement of facts to be true:

Now we, the said arbitrators, do unanimously find the facts as set forth in the said statement to be true.

And whereas each and every question which has been considered by the tribunal has been determined by a majority of all the arbitrators:

Now we, Baron de Courcel, Lord Hannen, Mr. Justice Harlan, Sir John Thompson, Senator Morgan, the Marquis Visconti Venosta, and Mr. Gregers Gram, the respective minorities not withdrawing their votes, do declare this to be the final decision and award in writing of this tribunal in accordance with the treaty.

Made in duplicate at Paris and signed by us the 15th day of August, in the year 1893.

And we do certify this English version thereof to be true and accurate.

(Bering Sea Arbitration. Indexes to the British case, p. 19.)

DECLARATIONS MADE BY THE TRIBUNAL OF ARBITRATION AND REFERRED TO THE GOVERNMENTS OF THE UNITED STATES AND GREAT BRITAIN FOR THEIR CONSIDERATION.

[English version.]

I.

The arbitrators declare that the concurrent regulations, as determined upon by the Tribunal of Arbitration, by virtue of Article VII of the treaty of the 29th of February, 1892, being applicable to the high sea only, should, in their opinion, be supplemented by other regulations applicable within the limits of the sovereignty of each of the two powers interested and to be settled by their common agreement.

II.

In view of the critical condition to which it appears certain that the race of fur seals is now reduced in consequence of circumstances not fully known, the arbitrators think fit to recommend both Governments to come to an understanding in order to prohibit any killing of fur seals, either on land or at sea, for a period of two or three years, or at least one year, subject to such exceptions as the two Governments might think proper to admit of.

Such a measure might be recurred to at occasional intervals, if found beneficial.

III.

The arbitrators declare moreover that, in their opinion, the carrying out of the regulations determined upon by the Tribunal of Arbitration should be assured by a system of stipulations and measures to be enacted by the two powers; and that the tribunal must, in consequence, leave it to the two powers to decide upon the means for giving effect to the regulations determined upon by it.

We do certify this English version to be true and accurate, and have signed the same at Paris this 15th day of August, 1893.

(Bering Sea Arbitration. Indexes to the British case, p. 3.)

Vessels composing the Canadian sealing fleet for 1894.

1. Arctic.
2. Ainak.
3. Aurora.
4. Annie C. Moore.
5. Agnes McDonald.
6. Arietas.
7. Annie E. Paint.
8. Brenda.
9. Beatrice.
10. Borealis.
11. G. G. Cox.
12. Cosco.
13. Charlotte.
14. City of San Diego.
15. Dora Sieward.
16. Diana.
17. E. B. Maroin.
18. Enterprise.
19. Fawn.
20. Florence M. Smith.
21. Geneva.
22. Henrietta.
23. Kate.
24. Kilmeny.
25. Katherine.
26. C. D. Rand.
27. Libbie.
28. Labrador.
29. Louis Adair.
30. Minnie.
31. May Bell.
32. Maud S.
33. Mary Taylor.
34. Mascot.
35. Mary Ellen.
36. Mermaid.
37. Otto.
38. Ocean Bell.
39. Osca and Hattie.
40. Penelope.
41. Pioneer.
42. Rosie Olsen.
43. Shelby.
44. San Jose.
45. Sapphire.
46. Saucy Lass.
47. Sadie Turpel.
48. Theresa.
49. Triumph.
50. Umbrina.
51. Viva.
52. Vera.
53. Venture.
54. W. B. Hall.
55. W. P. Sayward.
56. Wanderer.
57. Walter L. Rich.
58. W. A. Earle.
59. Favorite.

Vessels composing the American sealing fleet for 1894.

1. Alton.
2. Alexander.
3. Anaconda.
4. Anna Matilda.
5. Allie I. Alger.
6. Bonanza.
7. Bowhead.
8. G. G. White.
9. Emma and Louisa.
10. Emma.
11. Eppinger.
12. Edward E. Webster.
13. Ella Johnson.
14. Ethel.
15. Geo. Peabody.
16. Geo. R. White.
17. H. C. Wahlberg.
18. Henry Dennis.
19. Herman.
20. Ada Etta.
21. Jane Grey.
22. Kate and Ann.
23. Louis D.
24. Louis Olsen.
25. Lillie L.
26. Josephine.
27. Mary H. Thomas.
28. Mascot.
29. Mattie T. Dyer.
30. Mathew Turner.
31. Penelope.
32. Prescott.
33. Retriever.
34. Rattler.
35. Rosie Sparks.
36. St. Paul.
37. Sophia Sutherland
38. San Diego.
39. Stella Erland.
40. Teresa.
41. Volunteer.
42. Willard Ainsworth.
43. Winchester.
44. Amature.
45. Columbia.
46. C. C. Perkins.
47. Deeahks.
48. Dart.
49. Felitz.
50. James G. Swan.
51. Puritan.

MANAGEMENT OF ROOKERIES—DECREASE OF SEALS.

SEAL ISLANDS, ALASKA, *July 16, 1889.*

GENTLEMEN: I regret to report that the season's seal catch is progressing very unfavorably, and that the condition of the breeding rookeries, already past the date of fullest occupation for the year, indicates a large falling off in productiveness—much greater, in fact, than I have heretofore reported.

During the period from 1873 to 1883, as my reports from year to year will show, we experienced no difficulty in obtaining the full catch of seals early in the season, and the skins were all of the best marketable size and quality, for we had at that time a large surplus of killable animals from which to make our selection. It was customary during that period to secure in the month of June nearly one-half of our catch, all of the primest and best, and at the same time turn back to the rookeries for breeding animals, or as being undesirable for market, a very large percentage, averaging for the ten years in question perhaps 30 per cent of the whole number driven. In July in each of those years the percentage of rejected animals was still larger, amounting *from 50 to 80* per cent of the number driven; but of those a large major-

ity were under size for killing and required the additional year's growth that we were enabled by the very abundant supply of seals to give them. We could confidently count on their return the next season in prime condition.

The season's work for a catch of 100,000 skins was then finished from the 14th to the 20th of July, determined by our ability to do the work and not by the condition of the hauling grounds, for we had always seals enough in sight after the 10th of June, and sometimes even earlier, to keep our force fully occupied.

The breeding rookeries, from the beginning of the lease till 1882 or 1883, were, I believe, constantly increasing in area and population, and my observations in this direction are in accordance with those of Mr. Morgan, Mr. Webster, and others who have been for many years with me in your service, and of the late Special Treasury Agent J. M. Morton, who was on the islands from 1870 to 1880. Even as late as 1885 Special Treasury Agent Tingle reported a further increase of breeding seals, but his estimates were made in comparison with those of Prof. H. W. Elliott in 1872–73, and he was probably not fully aware of the fact that the increase had occurred prior to 1883, and that in 1885 there was already perhaps a slight diminution of breeders.

The contrast between the present condition of seal life and that of the first decade of the lease is so marked that the most inexpert can not fail to notice it. Just when the change commenced I am unable from personal observation to say, for, as you will remember, I was in ill health and unable to visit the islands in 1883, 1884, and 1885. I left the rookeries in 1882 in their fullest and best condition, and found them in 1886 already showing a slight falling off, and experienced that year for the first time some difficulty in securing just the class of animals in every case that we desired. We, however, obtained the full catch in that and the two following years, finishing the work from the 24th of June to the 7th of July, but were obliged, particularly in 1888, to content ourselves with much smaller seals than we had heretofore taken. This was in part due to the necessity for turning back to the rookeries many half-grown bulls, owing to the scarcity of breeding males. I should have been glad to have ordered them killed instead, but, under your instructions to see that the best interests of the rookeries were conserved, thought best to reject them. The result of killing from year to year a large and increasing number of small animals is very apparent. We are simply drawing in advance on the stock that should be kept over for another year's growth, reserving as far as possible, of course, all desirable half-grown bulls for breeders, but at the same time killing closer, I believe, than a wise policy would indicate.

The deduction need hardly be drawn, as it is only too apparent that the lessees, for the next two or three years at least, must, in any event, if the rookeries are to be stocked up to their best condition, be content with very small catches. I estimate that not more than 15,000 or 20,000 desirable skins can be obtained next year, and it is possible that taking even a much smaller number would sooner restore the rookeries to their former vitality.

The change in the breeding rookeries, though not so immediately alarming as that observed in the hauling grounds, owing to the large number of seals still in sight, is sufficiently marked to excite curious inquiry as to its cause. Large patches of ground on the outskirts of every rookery, which were covered with breeding seals and their young a few years ago, are now bare; the lanes and paths across the rookeries, along which the nonbreeding seals pass to and from their grounds, are

growing wider, and what is still more disturbing to the experienced seal hunter there is a very noticeable sparseness of population, both male and female, on every rookery. I should certainly be within bounds in stating that at least one-third less seals landed on the islands this year than ten years ago.

You will remark that I have, at the beginning of this statement, referred back for comparison only to 1873. Prior to that time we were suffering from the excessive killing of 1868, when, in the absence of any restriction, more than 200,000 seals were killed in a single year. The deficiency of male breeding seals, caused by this excess, continued for four or five years, and is referred to by Special Treasury Agent Bryant in his report to the Department under date of September 5, 1872. I allude to this only for the purpose of calling attention to the fact that any improper handling of the seal industry is immediately followed by marked results.

For the cause of the present diminution of seal life we have not far to look. It is directly traceable to the illicit killing of seals of every age and sex during the last few years in the waters of the North Pacific and Bering Sea. We are in no way responsible for it. During the first thirteen years of the lease comparatively few seals were killed by marauders, and we were then able not only to make good the deficiency caused by the slaughter of 1868, but, under our careful management, to produce a decided expansion of the breeding rookeries.

The history of fur-seal killing on the British Columbia coast would, no doubt, carry us back to an earlier date than the transfer of Alaska to the United States, but it was done mostly up to 1875 by the use of rude appliances, and the hunters were unable to pursue their vocation, to any great extent, on the open sea. About 1875–76, under the stimulus of better prices for skins, induced by the improved methods applied by us to the fur markets of the world, it was found profitable to fit out more expensive ventures from Victoria, and the seals were followed along the British Columbia and United States coasts as far north as Sitka; but prior to 1882–83 it had not come to the knowledge of the hunters that their work could be profitably pursued farther to the northwestward. The catch was too small up to this time to seriously affect seal life. An occasional predatory schooner came into Bering Sea before 1882, and the *San Diego*, with her cargo, was seized in 1876 and condemned to forfeiture under section 1956 of the United States laws. In one or two other cases certificates of probable cause of seizure were issued by the courts to the revenue officers, thus affirming the illegality of killing seals in Alaskan waters.

About 1882–83 the British seal hunters discovered that profitable voyages could be made to Bering Sea, and the few vessels engaged in those years were soon joined by others, until, in 1885, a fleet of twelve or fifteen schooners, some of them propelled by steam, were engaged in the business, and the catch sent into Victoria amounted to about 25,000 skins. The fleet sent more than 40,000 skins to market in the following year. More stringent orders were, however, issued to our revenue vessels, and three of the twenty or more engaged in that year were seized and still lie rotting on the beach in Unalaska Harbor. In 1887 a still larger fleet appeared, but was badly demoralized before the end of the season by the capture of fourteen of the vessels and the confiscation and sale of a large part of them, together with a large number of skins; in all, some 12,000, I think. Had this repressive policy of the Government been firmly adhered to from that time we should probably be little troubled with marauders this year; but pending negotiations with for-

eign powers sealed orders to be opened in Bering Sea were given to the revenue officers, directing them not to make seizures, and while these orders were withheld from American hunters they appear to have been published to the British fleet, for the usual number of British vessels made a profitable season's cruise, sending into market more than 19,000 skins; at the same time our American vessels were deterred by the tone of the published regulations of our Government from undertaking their usual voyages.

The operations of the marauders in the North Pacific and Bering Sea beyond the jurisdiction of British Columbia, and exclusive of what is known as the "Victoria catch" proper, may be summarized, not with absolute accuracy, but correctly enough for all practical purposes, about as follows:

1883, 1,000, and 1884, 5,000 skins, estimated without reliable data at hand; 1885, 12,000; 1886, 27,500; 1887, 25,000; and 1888, 19,000 skins reported by Messrs. C. M. Lampson & Co., of London; 1889, 10,761 skins to August 1, landed at Victoria, British Columbia.

Add to this the Victoria catch for the same seven years, which has averaged about 12,000 skins per annum—84,000—and we have a total of 184,261 skins sent to market in less than seven years. To represent the destruction of seal life, this number should be nearly doubled to include the loss of one young seal in embryo or left to starve upon the islands for nearly every adult killed; and again doubled, perhaps, to compensate for the unknown factor of waste in killing. Just what proportion of seals killed are actually secured we do not know, but we are confident that the loss of dead seals in the rough water of the open sea, and the wounding and subsequent death of many more, is a large percentage of those taken. Beyond this, we must also take into the account the demoralization of the herd, the infraction of their steady migratory habits and their possible deviation from their accustomed haunts, and the consequent destruction of the industry within our borders if indiscriminate slaughter is continued. I append a list of vessels reported engaged in sealing the present season.

I have at hand data from this year only on which to base an estimate of the respective numbers of seals killed in the waters of the North Pacific and Bering Sea. It appears that during the present season at least 5,201 skins, exclusive of the catch of the American vessels, were taken after the sealers left the Straits of Fuca and before they passed the Alaskan peninsula, for that number were transshipped to the British schooner *Wanderer* at Sand Point and sent back to Victoria to avoid possible capture by our revenue vessels. The British schooners *Pathfinder*, *Viva*, and *Sapphire* landed in Victoria their spring catches, amounting to 1,719 skins, early in June, and again sent down by the *Wanderer* 2,039 skins about the middle of July. This latter number must have been captured in the Pacific in less than six weeks, and many of them among the Shumagin Islands and along the coast to the westward of Kodiak, clearly within American waters.

Attention should also be directed to the fact that by preconcerted action all the British vessels rendezvoused at Sand Point, Ounga Island, Alaska, where there is neither port of entry nor customs officer stationed, and there, in utter disregard of customs law or international right, transshipped cargo, received supplies brought from a foreign port, and landed and sold whisky to the Alaska natives.

Until the present season we have been under the impression that the catching of seals in the waters of the North Pacific would be difficult and unprofitable, and that seal life could be preserved by maintaining

the closure of Bering Sea. Now, however, it seems doubtful whether it will not be necessary to extend protection over the waters of the North Pacific.

Of course it will be asked if this can be legally effected; I see no obstacle in the way of doing it. We would have no difficulty whatever in proving to the satisfaction of any fair-minded nation that all the seals in the eastern part of the North Pacific and Bering Sea are born and reared on the Pribilof Islands, and those in the western part of the same waters have their habitat on the Commander Islands; nor do they resort for breeding to any other than these two places in the Northern Hemisphere, excepting only the very small number found on Robben Island in the Okhotsk Sea. They can be positively identified as our property. The seals found in these respective places differ so much that expert skin assorters can distinguish between them in handling the skins; and, in any event, this matter concerns only the United States and Russia. When the seals on which the British are now poaching are found in the Pacific they are simply astray; but are, nevertheless, either our property or that of Russia, and should be respected and protected as such.

After twenty-one years of careful study of the subject, I am entirely satisfied that the usual migratory course of the seals leads them to the southward from the Pribilof Islands, mostly through the passes into the Pacific, to the eastward of and including the pass of longitude 172° west; thence they turn to the eastward along the Aleutian Archipelago, through the Shumagin group, and past Kodiak, to appear in February and March down about Vancouver Island and in the straits and channels to the northward and eastward of Vancouver, where large numbers are annually killed in the early spring months. The more notable proofs of this are:

(1) That many young seals are killed in November, December, and January by the Alaskans among the Aleutian Islands, and more could and would be taken if the natives were not restrained by our agents from hunting them.

(2) Fur seals are fish eaters and naturally keep upon such banks and shoals, within easy soundings, as furnish them an abundant food supply.

(3) They are rarely seen in the waters of the North Pacific at any considerable distance from soundings, but are plentiful along the Alaskan coast during all the winter months.

(4) A large proportion of the several thousand seals killed annually about the British Columbia coast in March and April are pregnant females in just that stage of gestation that would be expected in animals whose period of eleven months terminates in June.

(5) Almost simultaneously with their disappearance from the British Columbia coast in April they are again found in increasing numbers in the Aleutian Archipelago and, a little later, in Bering Sea.

(6) The most careful search for other breeding grounds than those at the Pribilof Islands has been fruitless. It can be positively asserted that none exist.

The best season for marauding in Bering Sea is the latter part of July and August, for the female seals, having left their young on the islands, are then off on the feeding grounds to the southward, and the destruction of the mother at this time is followed by the loss of the pup, which dies for want of nourishment. This was vividly illustrated in the heavy storms of last fall, when several thousand pups, too weak and feeble to withstand their violence, were thrown upon the beaches and *killed.* In the earlier years of the lease no such destruction of the young *was observed* during the autumn storms as we have lately witnessed.

The greater part of the illegal killing is done with firearms, but some of the vessels manned by Indians, and notably the *Black Diamond*, seized this summer, are fitted only with spears, and these, skillfully handled, are even more effective than guns, as they can be used without alarming the neighboring seals. The crew of the *Black Diamond* secured 143 skins in less than two days preceding her capture. It is also regarded by old hunters as quite feasible to catch them still more rapidly and surely by the use of seines and purse nets, though I am not aware the attempt has as yet been made.

The effect of this extensive and indiscriminate slaughter I have already pointed out. If unrestricted killing is to be continued we have no occasion to inquire in regard to any further franchise. The renewal of the lease would hardly be worth taking as a gift, and with the assurance of fullest protection against marauders and poachers, the fact should not be lost sight of that under the most intelligent management some years must elapse before the rookeries can be restored to their former productiveness. The protection, too, must extend beyond Bering Sea and over the North Pacific to insure perpetuation of the industry; and ought, indeed, in order to make it complete, to include all the waters along the British Columbia coast, for even the comparatively small number killed there is no inconsiderable item to the lessees in the present status of the rookeries.

Different plans for the preservation of the seals are suggested:

1. It is certainly in the interest of the whole world, excepting a few Canadian seal hunters, that the seals should be propagated and killed under proper restrictions. This is particularly true for the English, for they have more capital invested in the business and more people dependent upon the seal industry than any other nation. If, therefore, a territorial limit can be defined beyond which no seals shall be killed in the water, such limit being agreed upon by convention with England and Russia, and acquiesced in by the powers that have nothing at stake in the matter, protection will be afforded to such an extent as the limit proves restrictive. My own idea is that it should cover all the aquatic resorts of the seals, but if it be decided that British Columbia hunters are right in killing seals in British Columbia waters, then the limits might be defined, say, by restricting their operations to the eastward of longitude 153° west from Greenwich, to the southward of latitude 54° north, and to the northward of Cape Flattery. If at the same time restrictions are needed for the protection of Russian interests in the Northwestern Pacific, similar limitations, as the facts may indicate, may be marked out and seal life respected at all points beyond such limits.

2. If restriction by territorial limitation is likely to be difficult to enforce, or if for any other reason it appears objectionable, a close season could be agreed upon by convention within which no seals should be killed in the water. Such season should begin, if it be determined to allow seals to be killed in British Columbia waters, at about the time when the seals leave the vicinity of Vancouver Island in the spring and continue until the next winter, say about the middle of May until about the 1st of February.

3. To facilitate the enforcement of the regulation, both the territorial limitation and close season might be adopted. The vast extent of water to be patrolled, and the eagerness with which the seals are pursued, make it necessary to throw every possible safeguard around them if they are to be preserved.

It would unquestionably be unwise, from a financial point of view, on

the part of any of the nations interested, to allow pregnant female seals (and scarcely any other are taken there) to be killed on the British Columbia coast; but, if something must be conceded to the poachers, perhaps the opportunity to pursue their destructive occupation along this coast is the least that will reasonably content them.

In the present status of the seal fishery the value of a renewal of the franchise for another term of twenty years is very difficult to estimate. The outlook for the next three or four years is decidedly bad. The chief elements of uncertainty are:

(1) Doubt as to the intention of our Government in regard to protecting the fisheries against poachers.

(2) Question whether, in case a restrictive policy is decided upon, the Government will be able to successfully patrol the broad extent over which the seals are scattered. A failure to protect them without further delay will be fatal to any considerable catch on the islands.

(3) The fact that the rookeries are already badly depleted, and that all the best seals, for the next two or three years at least, must be reserved for breeders.

(4) The positive knowledge that the seals that would otherwise come forward for killing during the next two years have already been slaughtered, and that the catch must for several years to come be much smaller than heretofore.

I was of opinion two years ago that the next twenty years' lease could be more valuable than the present term, but am now greatly in doubt whether we can afford to pay as much as the present rental, even with a guaranty from the Government of entire protection outside of British Columbia waters. Without such guaranty there is "nothing in it" beyond a small prospective catch from such animals as may escape the toils of the hunter this summer. At the present rate of diminution the rookeries will soon do little more than support the natives dependent on them and pay the expenses of the necessary outfit to follow the business.

Very truly, yours, H. H. McINTYRE,
Superintendent.

The ALASKA COMMERCIAL COMPANY,
San Francisco, Cal.

CAUSES OF DECREASE IN SEAL HERD.

WEST RANDOLPH, VT., *December 15, 1890.*

MY DEAR SIR: I have at hand extracts from the report of Prof. H. W. Elliott to the Secretary of the Treasury in the fall of 1890, relative to the decrease of the seal rookeries of St. Paul and St. George islands, Alaska; and knowing that you take a deep interest in the matter, beg to call your attention to a few conspicuous errors into which he has fallen.

He asks, "Why is it that we find now only a scant tenth of the number of young male seals which I saw there in 1872? When did this work of decrease and destruction so marked on the breeding grounds begin? And how?" He answers these questions as follows:

(1) From overdriving, without heeding its warning, first begun in 1879, dropped then until 1882, then suddenly renewed again with increased energy from year to year, until the end is abruptly reached, this season of 1890.

(2) From the shooting of fur seals (chiefly females) in the open waters of the North *Pacific Ocean* and Bering Sea, begun as a business in 1886, and continued to date.

Professor Elliott is a naturalist, and a very good one. He is thoroughly familiar with the size, form, color, comparative anatomy, domestic habits, and whatever goes to make up the natural history of the seal. He is tolerably familiar with the seal as viewed from the hunter or business man's standpoint. He is also fairly capable of deducing from given facts a theory in regard to the increase or decrease of the seal. Given correct premises, he would perhaps come as near the truth in his deduction as the average observer. But when his premises are wrong, his deductions are more mischievous than those of the average man, because he asseverates his findings with such positiveness, and such an air of knowing all about it, as to carry the investigator along with him to the pitfalls digged by theory from wrong hypotheses.

He says, in brief, that there was overdriving in 1879, none in the two following years, beginning again in 1882 and continuing "until the end is abruptly reached in the season of 1890." As he writes forcibly in the same connection against the practice of driving the long distance from Southwest Bay (Zapadnie) to the village killing ground—about 4 miles—pointing out most disastrous effects from this practice, I suppose he means by "overdriving" the driving too great distance. If this is it I quite agree with him, and always have, and for that reason, except on very rare occasions, did not allow seals to be driven the long distances he describes, and it has never been habitually done. Boats were almost invariably sent to Southwest Bay and carts to Halfway Point to bring in the skins, and the animals were as invariably killed, during the last ten years of the Alaska Commercial Company's lease, as near the rookeries as seemed prudent. The windmill he fights through several paragraphs of alleged "reasons" is less worthy of attack than Don Quixote's. It exists only in his imagination.

Then, the end was not "abruptly reached." I repeatedly pointed out to our company and to the special Treasury agents, during the seasons of 1887, 1888, and 1889, that the seals were rapidly diminishing, and that in order to get the full quota allowed by law we were obliged to kill, in increasing numbers in each of those years, animals that should have been allowed to attain greater size; and, finally, the catch of 1889 was mostly of this class. If they had been contented with the same class in 1890 a much larger catch could have been obtained.

Again he is in error in saying that marauding in Bering Sea began in 1886. It commenced in 1884 with a catch of 4,000 skins, and was followed with a take of almost 10,000 in 1885.

This brings us to the second reason given by him for the decrease, to wit, "the shooting of seals (mostly females) in the open waters of the North Pacific Ocean and Bering Sea." And here he strikes the key note of what should have been his warning, but he strikes it so flat as to throw his chorus quite out of tune; but he was not there present on the islands during any of those six years of active poaching prior to the season just past, nor, in fact, for several years previous to those six years, and does not know what he is talking about. His second "reason" should have been his first, and I assert most positively, with knowledge drawn from an accurate personal cognizance of the facts, that the diminution of the seal was exactly coincident in the time of the decrease, and in its ratio from year to year, with the time and extent of the piratical marauding of the Canadian and American vessels in the waters of Bering Sea, and prior to the beginning of such marauding was not perceptible and did not exist.

I regret that Professor Elliott did not urge this one true reason with all the strong force of which he is capable, because it is fully time that

the serious import to the seal fisheries of further poaching was understood by our Government, premising always that it is really in earnest about what it is doing to preserve the fisheries, which, indeed, I find myself already doubting.

I am, very truly, yours,

H. H. McINTYRE.

Gen. N. L. JEFFRIES,
Washington, D. C.

LETTER FROM SECRETARY OF TREASURY TRANSMITTING ELLIOTT'S REPORT TO STATE DEPARTMENT.

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., February 23, 1893.

SIR: In compliance with the request contained in your communication of February 11, I have the honor to transmit herewith a certified copy (together with the photographic reproductions of the illustrations and maps) of the report of H. W. Elliott on the Pribilof Islands for 1890. The original of this report will be placed in the custody of Special Agent W. H. Williams for such use as you may find necessary.

In handing you this report I deem it my duty to acquaint you with certain facts in connection with my refusal to permit its publication.

Upon its examination I became convinced that it was pervaded by a spirit of aggressive criticism instead of being a dispassionate statement of facts; that Mr. Elliott's views had been unduly influenced by his relations toward certain individuals; that the report contained much matter, and particularly that referring to the fur seal, which had already been published by the Government in two forms at least; that the illustrations being made from sketches possessed inherent defects which rendered them valueless as records of the diminution or growth of the rookeries, while the scale of the rookery charts was too small to accurately indicate the condition of seal life at the time these observations were made.

I therefore declined to permit Mr. Elliott's return to the islands, and deemed it expedient to withhold publication of his report pending the sending of other officers to the islands for the verification of his statements and for the procuring of data on a systematic plan, aided by photography.

On further examining Mr. Elliott's report in the light of this additional information and comparing his statements with the island records now on file in this Department, I find that not only do the objections against the report cited above still hold good, but that Mr. Elliott has so used extracts from the records of the islands as to make them appear to substantiate his assertions that mismanagement on the part of the United States has played an important part in the diminution of seal life, which assertions are unsupported by the unabridged records. In view of its inaccuracies, its misleading character, and its disagreement with the information brought to me independently by at least three other officers whom I sent to the islands, and the further grave fact of the misuse of official data by Mr. Elliott, I do not believe that the Government would be justified in publishing this report.

Very respectfully,

CHARLES FOSTER, *Secretary.*

Hon. JOHN W. FOSTER,
Secretary of State.

MR. PHELP'S ARGUMENT BEFORE PARIS TRIBUNAL.

I.

On April 4, 1893, Mr. Phelps made to the Tribunal the following statement in regard to Mr. Elliott's report of 1890:

This paper was produced and furnished to the British commissioners during their session at Washington and remained in their possession as long as they cared to keep it. It will thus be seen that there has been no disposition on the part of the United States Government to withhold or to conceal this document.

II.

The report is of little value as an authority and quite as likely to mislead as to guide. The author is utterly untrustworthy as an observer.

(1) His field notes show this on their face: A field note should be a bare and clear and uncolored record of facts observed. These are a record not only of facts, but of conjectures, opinions, predictions, reflections, emotions, etc.

An observer should be severely objective. Elliott is always subjective. It is his own conjectures and reasonings which he is most concerned with. A perusal of pages 236 and 237 (entry of July 10) will afford amusing proof of this.

(2) It is the misfortune of Mr. Elliott and of those who rely upon him that he has written at different times on the subject of fur seals, and his representations of the facts at these different times vary in some cases according to the theories which he was interested to establish.

Thus, in 1872–1874, he observed that a certain detached rock or islet was then covered with the forms of fur seals; but in 1890, writing with the purpose of showing that injurious redriving was practiced, he represents that the presence of seals at this place was a wholly recent phenomenon, occasioned by a too severe working of the neighboring sealing grounds.

(3) His assertions of important matters of fact are shown to be erroneous by evidence far better than his. For instance, in his report for 1890 he represents certain places which on his earlier visits he found abounding in young seals to be absolutely destitute of them, whereas it is proved by the records of the islands that at those very times young seals were driven and killed from those same places.

Thus he writes July 19, 1890: "Not a single holluschak on Zoltoi Sands this morning and not one had hauled there this season." The official records for 1890 (British case, Appendix, Vol. III, United States, No. 2, 1890, pp. 16, 23) show: (*a*) That on that very day 3,956 seals were driven from Zoltoi in connection with Reef rookeries, of which number 556 were killed; (*b*) that a drive had already been made from those same places June 24, on which occasion 426 seals were killed.

(4) Mr. Elliott appears to be guilty of great inaccuracy in quoting statements which have been made to him. Thus he attributes to Daniel Webster the following:

He says that ever since 1876–77 he has observed a steady shrinking of the hauling grounds at Northeast Point.

In the United States case (Appendix, Vol. II, p. 181), Daniel Webster makes, however, a sworn statement which is wholly at variance with the above:

My observation has been that there was an expansion of the rookeries from 1870 up to at least 1879. *In the year 1880 I thought* I began to notice a falling off from the

year previous of the number of seals on Northeast Point rookery, but this decrease was so very slight that probably it would not have been observed by one less familiar with seal life and its conditions than I.

(5) As a reasoner he is equally bad. He is dominated by a favorite theory, and when this comes in collision with facts he can not yield the former, and is consequently constrained to accommodate the latter to it.

(6) The counsel for Great Britain, in order to establish credit for Mr. Elliott as an authority, point to the circumstance that Mr. Blaine referred to him with respect in his letter of March 1, 1890. Mr. Blaine was, undoubtedly, as many others were upon the first appearance of Mr. Elliott as a writer upon seals, under the impression that he was a trustworthy witness. But such was not, at that time, the view of those representing the British Government.

In order to discredit Mr. Elliott as a theorist and reasoner, Mr. Tupper cites, in a letter dated March 8, 1890 (British case, Appendix, Vol. III, United States, No. 2, 1890, p. 441), the following criticism made upon Mr. Elliott by Mr. W. L. Morris in 1879:

This man seems to be the natural foe of Alaska, prosecuting and persecuting her with the brush and the pen of an expert whenever and wherever he can get an audience, and I attribute the present forlorn condition of the Territory more to his ignorance and misrepresentation than to all other causes combined.

Mr. Tupper then goes on to say:

His evidence in 1888 is open advocacy of the United States contention. His writings and reports prior to the dispute will be referred to, and it will be submitted that his statements and experiences before 1888 hardly support his later theories.

(7) Dr. Dawson's (one of the British commissioners) estimate of Professor Elliott in the fall of 1891 is thus told by Judge Swan (United States counter case, p. 414), who quotes Dr. Dawson as follows:

Elliott's work on seals is amusing. I have no hesitation in saying that there is no important point that he takes up in his book that he does not contradict somewhere else in the same covers. * * * His work is superficial in the extreme.

III.

The avowed purpose of Mr. Elliott in this report of 1890 is to show that the Alaskan herd has been generally diminished in numbers and to point out the causes of the diminution.

The only true cause of this decrease which can be gathered from any facts stated by him is pelagic sealing; but he has a theory that there is another cause, namely, overdriving and redriving, which he assumes, not only without proof, but against the proof, to have been practiced to a considerable extent for a long period of time prior to 1890.

It is important to understand just what he means by overdriving and redriving. He does not mean careless handling or undue urging of the seals during any given drive, for he specially states that the drives were and are very carefully made (infra, under fourth, 3).

What he does mean by his charges concerning overdriving is this: That in the face of a diminishing number of seals it was still endeavored to take 100,000 skins per annum, which necessitated, at a date as early as 1884 to 1885, the following:

Driving from the rookery margins, where alone the young males were found in these later years, with consequent disturbance to the breeding seals.

The turning away from the killing grounds of an increasing number of unkillable seals, which seals ran the risk of being several times *redriven in the* same season.

(*b*) When did this scraping of the rookery margins and overdriving begin? There is no evidence that either began prior to 1890. Elliott failed to observe or record either between 1872 and 1876. He advances in his report of 1890 no evidence whatever on the subject, though he alleges at a single place that the natives assured him "that they had been driving seals in this method ever since 1885; had been obliged to or go without seals."

This statement attributed to the natives is wholly uncorroborated, nor does it appear in their examinations, which are given at pages 300 to 304; that it is in conflict with the evidence of Mr. Goff will be shown hereafter.

(*c*) Mr. Elliott thinks that the necessity which leads to overdriving, namely, a scarcity of killable males, began to exhibit itself as early as 1879, and in proof of this he alleges that a hitherto untouched reserve was then resorted to, namely, Zapadnie. Furthermore, he supposes that this scarcity of killable seals, making redriving essentially necessary, was decisively manifested in 1882 and continually thereafter by the fact that a constant resort was from that time made to theretofore "untouched sources of supply" (VI, VIII, IX). In this particular also he is totally in error. No such supposed "untouched sources of supply" then, or ever, existed. Zapadnie and Polavina are intended by him. They had been systematically drawn upon from the first. (Vol. II, Appendix to United States case, pp. 117–127; United States counter case, pp. 78, 79.)

Mr. Elliott's error in this respect is the more inexcusable, since the official island records were at his disposal and appear to have been examined by him. The following tables showing the drives that were actually made from Zapadnie and Polavina are taken from the British argument, page 103:

Year.	Southwest Bay (including Zapadnie).	Halfway Point (Polavina).	Year.	Southwest Bay (including Zapadnie).	Halfway Point (Polavina).
1871	4	1	1881	5	4
1872	1	1	1882	10	5
1873	3	0	1883	9	5
1874	6	0	1884	9	9
1875	7	1	1885	6	8
1876	8	1	1886	12	9
1877	6	3	1887	8	6
1878	6	3	1888	8	8
1879	7	3	1889	8	7
1880	5	4			

(In examining tables in the United States case, Appendix Vol. II, pp. 117–127, it should be remembered that "Zapadnie" and "Southwest Bay" are two names for the same place, and so also are "Polavina" and "Halfway Point," the latter term being the English for Polavina.)

(*d*) Upon this basis of utter misapprehension Elliott proceeds forthwith to construct a theory, and his theory as far outruns his supposed facts as those supposed facts do the truth. For he proceeds to assume that the driving and redriving of seals have been gradually increasing from year to year and very rapidly since 1884–85, that the process of driving in any form renders those seals which are turned back from the killing grounds worthless for rookery service, and that the work of destruction thereby produced "set in from the beginning, twenty years before 1890" (pp. 7 to 10).

(*e*) He introduces no proof that driving, overdriving, or redriving of any sort ever injured *the generative* organs of a seal which was allowed

eventually to return to the water, save the following (see pp. 150, 203, 271), which he has mistranslated from Veniaminof. But here, too, he has led himself into error:

Elliott's translation (p. 203).	*Correct translation.*
Nearly all the old men think and assert that the seals which are spared every year, i. e., those which have not been killed for several years, are truly of little use for breeding, lying about as if they were outcasts or disfranchised.	Nearly all the old travelers think and assert that sparing the seals for some years, i. e., not killing them for some years, does not contribute in the least to their increase and only amounts to losing them forever.

Veniaminof thus makes no reference whatever to driving, still less does he refer to any supposed effects of driving upon the reproductive powers of the seal.

It should be added that both the British commissioners and the British Government have been misled by Elliott's erroneous translation. (See British Commissioners' Report, sec. 712, and British counter case, p. 263.)

(*f*) The notion that the mere driving of a seal even over rough ground renders it impotent is in itself sufficiently absurd, but it becomes still more so when considered in connection with the following extract from Mr. Elliott's field notes (p. 244):

> I have sat for hours at a time watching the seals come up and go down in ceaseless files of hundreds and thousands, actually climbing up in places so steep that it was all an agile man could do to follow them safely.

(*g*) It follows from the above that so far as Elliott's report is relied on to show considerable cause of injury to the herd, it fails entirely. His belief upon this point was founded upon an utter mistake, assuming that he did not wish to be misled. He never saw any redriving or overdriving until 1890 (when it did exist); nor had any other witness ever seen any worthy of notice previous to 1890.

The counsel for Great Britain, seeking for another evidence to prove redriving, have recourse to the report of Mr. Goff for 1890. But he disproves the assertion by distinctly contrasting the large numbers of young seals turned back in 1890, with the small number theretofore turned back. (British counter case, p. 265.)

(*h*) Eliminating this clear and manifest error from Elliott's report, the latter proves, and alone proves the following: That in 1872–1874 the herd was in a condition of full and abounding prosperity; that when he next observed it in 1876, its condition was not perceptibly changed; that in 1890, when he last observed it, it had become greatly diminished in numbers, so as to make it difficult to obtain the quota of 100,000 without redriving.

And this is just what the United States have from the first maintained.

IV.

His melange of observations, reasonings, conjectures, predictions, and criticisms, when scrutinized, will be found to support the positions of the United States in nearly every particular, certainly in each of the following:

(1) That it is in the power of the United States and its lessees under normal conditions to gather the whole annual increase of the seals without diminishing the normal numbers of the herd.

> Page 69: The polygamous habit of this animal is such that, by its own volition, I *do not think* that more than one male annually out of fifteen born is needed on the *breeding grounds* in the future.

Page 118: In this admirably perfect method of nature are those seals which can be properly killed without injury to the rookeries, selected and held aside by their own volition, so that the natives can visit and take them without disturbing in the least degree the entire quiet of the breeding grounds where the stock is perpetuated.

Page 129: When the "holluschickie" are up on land they can be readily separated into their several classes as to age by the color of their coats and size, when noted; namely, the yearlings, the 2, 3, 4, and 5 year old males.

(2) That the methods adopted on the Pribilof Islands were from the first, according to his observations of 1872–1874, admirably adapted to accomplish the gathering of the annual increase (pp. 71, 74).

(See also description of drive in the parts quoted from his report of 1874, pp. 122–128.)

(3) That the methods pursued in 1890 (with the single exception of alleged redriving and overdriving, already noticed) were in all respects as good as, and in some better than, those pursued in 1872 to 1874.

Page 269: I should remark that the driving of the seals has been very carefully done; no extra rushing and smothering of the herd, as it was frequently done in 1872. Mr. Goff began with a sharp admonition, and it has been scrupulously observed thus far by the natives.

Page 283: Yesterday afternoon I went back to Tolstoi over the seal road on which the drive above tallied was made in the night and morning of the 7th instant; the number of road "faints" or road skins was not large, which shows that the natives had taken great care in driving these seals. This they have uniformly done thus far (see also p. 129).

Mr. Elliott draws a bill (p. 217) for the restoration of the herd, but it contains no designed improvement in the methods.

Elsewhere, however, he suggests the following: That no culling of the herds be allowed, i. e., that every seal driven up be killed (p. 73), and that no driving be allowed after July 20 (p. 179).

These are the sole improvements which even he has to suggest.

(4) That according to his observations of 1872–1874 and 1876 the herd could safely support a draft far larger than 100,000, probably as large as 180,000 annually (p. 69).

(He was first on the islands during the three years 1872 to 1874. This report, written in 1890, represents the herd in 1874 as being in a flourishing condition. He was again on the islands in 1876. He does not intimate anywhere in this report of 1890 that the condition of 1876 was not in all respects as good as that of 1872, 1873, and 1874.)

(5) That female seals should never be killed.

Page 74: We do not touch or disturb these females as they grow up and live, and we never will if the law and present management is continued.

Page 213: In 1835, for the first time in the history of this industry on these islands, was the vital principal of not killing female seals recognized.

(6) That pelagic sealing is essentially destructive in its nature, and that at least 85 per cent of the pelagic catch is composed of females.

Page IX: I could figure out from the known number of skins which these hunters had placed on the market a statement of the loss and damage to the rookeries, to the females and young born and unborn, for that is the class from which the poacher secures at least 85 of the 100 of his catch.

Page 13: The young male seals have been directly between the drive, club, and poacher since 1882, while the females have had but one direct attack outside of the natural causes. They have been, however, the chief quarry of the pelagic sealer during the last five years.

(7) That the loss through the wounding and sinking of seals is enormous.

Page 214: Five thousand female seals, heavy with their young, are killed in order to secure every 1,000 skins taken. (See also p. 85, footnote.)

(8) That it is an absolute necessity that pelagic sealing should be suppressed on the ground that it is an immoral pursuit, and one which

is "repugnant to the sense of decency and simplest instincts of true manhood." He makes the following recommendation (see p. 214):

That pelagic sealing in the waters of Bering Sea be prohibited and suppressed throughout the breeding season, no matter how, so that it is done, and done quickly.

This step is equally imperative. The immorality of that demand made by the open-water sealer to ruin within a few short years and destroy forever these fur-bearing interests on the Pribilof Islands—the immorality of this demand can not be glossed over by any sophistry. The idea of permitting such a chase to continue where 5,000 females, heavy with their unborn young, are killed in order to secure every 1,000 skins taken, is repugnant to the sense of decency and the simplest instincts of true manhood.

I can not refrain from expressing my firm belief that if the truth is known—made plain to responsible heads of the civilized powers of the world—that not one of these Governments will hesitate to unite with ours in closing Bering Sea and its passes of the Aleutian chain to any and all pelagic fur sealing during the breeding season of that animal.

(9) That cows suckle no pups other than their own.

Referring to the driving of nursing cows, he says:

Page 297: * * * That means death or permanent disability, even if the cows are driven but once—death to both cow and her pup left behind, since that pup will not be permitted to suckle any other.

(10) That pups learn to swim; that in the beginning of August a large majority of them are wholly unused to water (p. 255), and that a number of them do not "get into the water" before September 1 (p. 260).

(11) That the seals are of a gentle disposition, are not frightened by the presence of man, and should not be regarded as wild animals.

Page 123: *Docility of fur seals when driven.*—I was also impressed by the singular docility and amiability of these animals when driven along the road; they never show fight any more than a flock of sheep would do.

Page 98: *Gentleness of the seals.*—Descend with me from this sand-dune elevation of Tolstoi and walk into the drove of holluschickie below us; we can do it; you do not notice much confusion or dismay as we go in among them; they simply open out before us and close in behind our tracks, stirring, crowding to the right and left as we go, 12 to 20 feet away from us on each side. Look at this small flock of yearlings—some 1, others 2, and even 3 years old, which are coughing and spitting around us now, staring up at our faces in amazement as we walk ahead; they struggle a few rods out of our reach and then come together again behind us, showing no further notice of ourselves. You could not walk into a drove of hogs at Chicago without exciting as much confusion and arousing an infinitely more disagreeable tumult; and as for sheep on the plains they would stampede far quicker. Wild indeed! you can now readily understand how easy it is for two or three men, early in the morning, to come where we are, turn aside from this vast herd in front of us and around us 2,000 or 3,000 of the best examples, and drive them back, up and over to the village.

(12) That virgin females go to the islands when 2 years old and are there impregnated.

Page 18: It must be borne in mind that perhaps 10 or 12 per cent of the entire number were yearlings last season and came up onto these breeding grounds as virgins for the first time during this season; as 2-year-old cows they of course bear no young. (Ibid.) This surplus area of the males is also more than balanced and equalized by the 15,000 to 20,000 virgin females which come onto the rookery for the first time to meet the males. They come, rest a few days or a week, and retire, leaving no young to show their presence on the ground.

Page 139: Next year these yearlings which are now trooping out with the youthful males on the hauling grounds will repair to the rookeries, while their male companions will be obliged to come again to this same spot.

V.

Again this report not only supports all positions taken by the United States on the main points, but as clearly condemns all of the special assertions made on the part of Great Britain for the purpose of weakening those positions:

(1) Mr. Elliott holds that coition is never effected in the sea (p. 83).

(2) He repudiates the notion that the seals have in any respect changed their habits, either in dates of arrival at the islands or otherwise (pp. 80, 104, 105, 108, 240, 242, 291).

(3) His observations are to the effect that in the years 1872 to 1876 the herd was in a condition of abounding prosperity. The British Government cites Bryant to prove that during this period a decrease in certain classes of the seals had been observed (pp. 69, 77, 78, 79, 124, 151).

(4) The British assertion that the effect of raids upon the island has been considerable is contradicted by him (pp. 57, 58).

(5) He states, contrary to the contention of Great Britain, that there has been a gradual improvement in the methods of driving and that the actual driving to-day is carried on with the greatest of care (pp. 269, 283).

(6) He states that the condition of the natives has improved since the Americans took possession of the islands, and that they are to-day in every respect well off (pp. 163, 185).

(7) He states that no reduction took place in the standard weight of skins until 1887 (p. 143).

(8) He states that the seals have great powers of locomotion on land (pp. 53, 244, 258).

Elsewhere Mr. Elliott says (Fur-seal Fisheries of Alaska, p. 136):

> Its forefeet or flippers are exceedingly broad and powerful, and when it comes out of the water it moves forward, stepping with considerable rapidity and much grace.

(9) That the latest date for properly observing the rookeries is July 20 or thereabouts, for after that date disintegration sets in (pp. iii, 16, 21, 83, 236, 249).

It follows that the rookery observations of the British commissioners, who did not reach the islands in 1891 until July 27, are worthless. It follows, also, that Mr. Macoun (whose observations in 1891 were even less extensive than those of the British commissioners) is not in a position to institute any comparison between the appearance of the rookeries in 1891 and 1892, respectively.

(10) Mr. Elliott gives no countenance to the idea that there exist independent pelagic schools of young seals which do not visit the islands. His report is replete with instances where he has observed large numbers of yearlings and 2-year olds of both sexes on the islands.

> Page 105: By the 14th to the 20th of June, they (the holluschickie) then appear in their finest form and number for the season, being joined now by the great bulk of the 2-year olds, and quite a number of yearlings. By the 10th of July their numbers are beginning to largely increase, owing to the influx at this time of that great body of the last year's pups or yearlings. By the 20th of July the yearlings have put in their appearance for the season in full force. Very few yearlings make their appearance until the 15th of July, but by the 20th they literally swarmed out, in 1872–1874, and mixed up completely with the young and older males and females as the rookeries relax their discipline and "pod" or scatter out.
>
> Page 243: I took notice of a large proportion of small or 2-year-old females, and the unusual slowness of hauling, compared with 1872, which was now at its greatest activity July 7. (Tolstoi, July 1, 1890.)
>
> Page 253: The holluschickie are chiefly 1-year olds; nine-tenths of the several pods hauled out here to-day are yearlings. A great many yearling females are hauling down at landings in and among the scattered harems, aimlessly paddling about; their slight forms and bright backs, white throats and abdomens, are shining out very brightly. (North Rookery, July 30, 1870.)
>
> Page 298: I observed a very large proportion of yearling cows scattered all over the breeding ground from end to end near the sea margin, while the yearlings of both sexes are completely mixed upon the outskirts of the rookery, here and everywhere else commingled with the adult cows and their young pups. (St. George, July 30, 1890.)

References to the report showing that yearlings and 2-year olds come to the islands might be multiplied almost indefinitely. (See pp. 98, 139, 140, 143, 147, 253, 255, 256, 277, 289, 291.)

(11) Mr. Elliott scorns the notion upon which the framers of the British case have sought to base the moral title of Canada to a special benefit from the herd, namely, that the seals consume food which would otherwise support fisheries valuable to Canada, for he shows that the true enemy of these fisheries is the dogfish, of which the seal is, in its turn, the greatest destroyer.

Page 307: Suppose, for argument, that we could and did kill all the seals, we would at once give the deadly dogfish (*Squalno ancarthias*), which fairly swarms in these waters, an immense impetus to its present extensive work of destruction of untold millions of young food fishes, such as herring, cod, and salmon.

A dogfish can and does destroy every day of its existence hundreds and thousands of young cod, salmon, and other food fishes—destroys at least double and quadruple as much as a seal. What is the most potent factor to the destruction of the dogfish? Why the seal himself, and unless man can and will destroy the dogfish first, he will be doing positive injury to the very cause he pretends to champion if he is permitted to disturb this equilibrium of nature and destroy the seal.

VI.

If Mr. Elliott's views, as an observer of facts, as a discoverer of causes, as a reasoner, or as an authority in any particular upon seal life upon the Pribilof Islands, are of any value whatever, it should be to show that in the years from 1884 to 1890 the male seals had, in consequence of overdriving, become so few in number and so destitute of virile power that they were not competent to the task of impregnating even the diminished number of female seals which the herd then contained.

Do those who represent the Government of Great Britain really wish to persuade the Tribunal that this is true? Such would seem to be the only conceivable purpose for which such a struggle was made to introduce this report into the evidence. Unless it tends to prove this, it has no tendency except to overthrow every position taken on the part of Great Britain.

But yet the same learned counsel have produced more than one hundred witnesses who swear that in the years 1891 and 1892 the seals were found upon the seas in unprecedented numbers, and some twenty-five of them note specifically having taken young, small, or 2-year-old seals, some of the catches consisting exclusively of this class, which must have owed their existence to the impotent bull observed by Mr. Elliott.

What are we to believe—that Elliott's statements are worthless, or that these witnesses are testifying to what is false, or that these few supposed impotent bulls were endowed with procreative powers wholly unprecedented even in the case of the Alaskan bull seal? Let these contradictions be reconciled as best they may. In the view of the Government of the United States, both these conflicting statements are alike untrustworthy and should be disregarded.

(1) The names of the one hundred witnesses and upward are given in the British counter case (Appendix, Vol. II, pp. 29–33).

(2) The names of the twenty-five witnesses above mentioned, who caught young, small, or 2-year olds in 1892, are as follows (see British counter case, Appendix, Vol. II, pp. 14–22):

Capt. Abel Douglas, George Roberts, William G. Goudie, James Shields, George F. French, Andrew Mathison, Capt. Ernest Lorenz, *Capt. Charles* Campbell, Capt. James W. Todd, Henry Paxton, George

Heater, Capt. James D. Warren, Capt. Micajah Pickney, Capt. Michael Keefe, William F. Roland, P. Garlson, Kasado, Schoultwick, Clahapisum, Hanaisum, Clahouto, W. Watt, Clat-ka-koi, Kickiana, and Ehenchesut.

And Mr. Elliott himself seems to have observed the usual number of yearlings in 1890 (ante, p. 17). And yet the impotency which he imagines to have been brought about as the result of redriving through a series of years must, if it existed at all, have been nearly as marked in 1880, when these yearlings were begotten.

REPORT OF JOSEPH MURRAY, SPECIAL TREASURY AGENT, FOR THE YEAR 1895.

DIVISION OF SPECIAL AGENTS,
TREASURY DEPARTMENT,
Washington, D. C., December 20, 1895.

SIR: I have the honor to report that pursuant to Department instructions dated April 4, 1895, I proceeded to the Pacific Coast and sailed from Seattle April 23, on board the regular mail steamer for Sitka, where I arrived May 1 and learned that court was about to be held at Juneau, to which city I immediately returned for the purpose of looking after the interest of the Government, as it might appear in the ex-Marshal Porter case, one of whose deputies, Mr. Adolph Myer, was about to be tried on charges of forgery, embezzlement, stealing public records, and several others of like nature.

My written instructions are as follows:

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, D. C., April 4, 1895.

SIR: You are directed to perfect your arrangements with a view to your departure for Sitka, Alaska, with as little delay as practicable. It will be your duty to ascertain and report the location of every salmon cannery or saltery in Alaska; the capacity of the same in cases, barrels, half-barrels, and kits; the pack in full for each season; the number of boxes of tin consumed and the cost of the same per box at place of purchase; the approximate or actual selling price of the product of each fishery in the market to which the same may be consigned; the number of employees in each cannery and the totals thereof, segregating whites, natives, Chinese, etc., male and female, adults and minors, and whether citizens or aliens. You should include, also, in said reports the codfish, herring, herring-oil, guano, and other such industries. It is desired that you investigate the alleged taking and destruction of the eggs of game wild fowl in Alaska, as well, also, as to the alleged wanton destruction of game birds, deer, fox, and other animals, and also the advisability of adopting suitable regulations as to close seasons, in order to prevent such destruction in future.

You should visit, if possible, every cannery in Alaska, and, when practicable, the necessary journeys should be made on vessels of the United States. This instruction is not to be construed, however, as forbidding the use of other means of conveyance when necessary. You are expected to report to the nearest collector of customs any infraction of the revenue laws which may come to your notice. You should report, also, to the Department any violation of the laws relating to the introduction of firearms or of liquors into the Territory of Alaska.

For your information I inclose herewith copy of the circular dated August 10, 1892, pertaining to the erection of dams, barricades, or other obstructions in the rivers of Alaska for the purpose or result of preventing or impeding the ascent of salmon or other anadromous species to their spawning grounds. It will be your duty to enforce the provisions of said circular and to warn all persons who have erected dams, barricades, or other obstructions to remove the same forthwith, and in default thereof you should report the facts, with the proper proofs, to the United States attorney for prosecution.

You should submit reports to the Department from time to time showing the result of your work, and at the close of the fishing season you should forward a full report, covering said season and stating the result of your observations under these instructions. Any recommendations you deem advisable may be embodied in your reports. Any official communication which the Department may find necessary to address to you hereafter will be mailed to Sitka, Alaska. In this connection you are informed

that in addition to your duties as an agent for the salmon fisheries you are to hold yourself in readiness to make such other investigations or render any service which the Department may require of you. If practicable, you should at some time during the ensuing season visit the seal islands of St. Paul and St. George for the purpose of inspecting the rookeries thereon and of comparing their condition with that of the season of 1894, with which you are familiar.

Respectfully, yours,

J. G. CARLISLE,
Secretary.

Mr. JOSEPH MURRAY,
Special Agent for the Protection of the Salmon Fisheries,
Fort Collins, Colo.

In addition to the foregoing, I was verbally instructed (time permitting) to attend court during the trial of the ex-Marshal Porter case and to take particular notice of how jury trial was conducted in Alaska, and to learn what I could from reliable sources about the manufacture and importation of spirituous liquors.

Finding it was as yet too early for salmon fishing and that I could not find transportation to the nearest cannery for several weeks, and as I was in the midst of the best part of Alaska and of its best and most energetic citizens, where I could procure most of the information asked for in my instructions, I resolved to attend court until the arrival of the Bering Sea patrol fleet off Sitka, and then continue my journey to the westward.

During our travels through Alaska in 1894, Hon. C. S. Hamlin, Assistant Secretary of the Treasury, and I were informed at every important point we touched and found white men that, "because of its nonenforcement, the law is looked upon as a farce," and that "it is impossible to find a jury to convict for smuggling or violating the revenue law," and I am sorry to have to report that it is only too true.

For three weeks I was present at every session of the court, and in that time I learned beyond a doubt that not only were juries to be had to return verdicts of "not guilty" in behalf of every violator of the revenue law, but also for any crime, if one only knew the particular attorney to employ.

Mr. Adolph Myer had been a deputy for Marshal Porter; had absolute control and personal charge of the marshal's office, books, and money, and for years served his superior faithfully and well. But under the evil influence of bad and wicked men he was led step by step from one crime to another until forgery and embezzlement were reached, and then the end.

When the case was about to come to trial, I was in daily, hourly communication with the district attorney, whom I advised to stand up for the right against all of the vile methods that might be used against him, and that in doing so he would be supported by the Government. He said he was afraid of bodily injury, of his personal safety; that unless he could secure the joint services of a certain attorney whom he named and whose strength and worth lay in his power to influence juries, it would be useless to try the case before a jury, for most of the jurymen would be personal friends of the prisoner and many of them participators in his crime; that although the prisoner was guilty of enough crime to keep him imprisoned twenty years, if he could not influence the jury he would be turned loose on a verdict of "not guilty."

Not knowing how to influence the jury for the purposes indicated, and being unable to control the district attorney, I was necessarily obliged to remain a silent spectator of a compromise between the parties interested, the terms of which were that on condition of the withdrawal of the plea of "not guilty" and the substitution of the plea of "guilty"

the prisoner would be let off with a small fine and light sentence, which was done by the district attorney stating that a fine of $50 and twenty-eight months' imprisonment would be satisfactory.

As soon as he was sentenced he was taken from his cell to the grand jury room to testify against his former employer and superior officer, ex-Marshal Porter, and he actually did testify to Porter's having embezzled or stolen a sum of money from the Government, sent from the Department of Justice by check, amounting to some $1,120.32, which amount was part of the money drawn by Deputy Myers from the Department during the temporary absence of the marshal, and for which he had just been convicted.

And yet, on testimony of that sort and from such a source, ex-Marshal Porter was indicted by the grand jury of Alaska for embezzlement. He was approached in my presence by the district attorney as a friend, and asked to acknowledge that the Government owed the money to the marshal's office, or to be disgraced in his old age by an indictment by the grand jury.

Porter answered that he would die before he would consent to rob the Government, and the next day he was indicted.

LIQUOR AND SMUGGLING.

Liquor cases were called and disposed of with the regularity of clockwork, and always with the same result; the witnesses were Indians and half-breeds, the prisoner was a white man, and his friends and chums were in the jury box to acquit him.

"Can you render a verdict according to the law and testimony," said the judge to a man who was being sworn as a juror. "I can," said the fellow, "unless the testimony is that of an Indian."

The testimony of Indians is not valued in Juneau, although many of them are brought in here as witnesses, and supported at the expense of the Government.

Within sight of the court-house were 30 public saloons open and doing a public business, some of the more pretentious ones keeping open house all night, and there was not a Government officer in Juneau who could be found to interfere with them.

On one technicality or another it seems the laws are not sufficiently explicit to make it the plain duty of any particular officer to raid a saloon without the cooperation of other officers, who are, as a rule, not on hand when wanted.

Speaking to a customs officer at Juneau, I said, "How on earth do you account for the existence of so many saloons in Juneau, and many larger ones in course of erection, if you men do your duty?" To which he replied, "Mr. Murray, I know you are justified in asking such a question, but you do not know anything about the real situation here or you would not blame me personally. When I first came here I was zealous and watchful, and I raided a smuggler's den and captured some 10 barrels of liquor, but what was the result? The district attorney came into court and moved to have that smuggler discharged on paying a fine of $50."

Meeting the district attorney, I asked him for his side of the story, and he said, "Yes, I did let the fellow go on a small fine, for I found that because he was not in the inner circle of smugglers and vendors he had been selected as a victim and his whisky seized, taken to the custom-house, and sold at private sale to one of the inner ring for less than one-third its real value."

And so the story continued to the end of the chapter; one officer willing to lay all the blame on the other, while between them the interests of the Government are left to suffer, and the law, that was intended to do good, become a subject of derision and contempt.

At Juneau many influential professional and business men—whose names can be given if necessary—expressed themselves to me in substance as follows: "There are 30 saloons here doing an open, public business, and the governor is being very badly deceived by men high in public affairs who are all more or less financially interested in the liquor business. We favor the fearless enforcement of the law or its unconditional repeal. We think that the true solution of the liquor question in Alaska is high license—say $1,000 in Sitka and Juneau and in proportion in smaller places."

One of the most prominent attorneys at the Juneau bar said: "I have faith in the future of Alaska, and I think I can give some reliable information about the country and its needs. I believe the Government is to blame because, for ten or twelve years, no effort has been made to enforce the law, until now the average man has no idea of having any law enforced. Courts, juries, and lawyers are looked upon with contempt. Juries can not be found here, even among our best people, to convict for smuggling or violating the revenue laws. Perjury is common; and I should advise the taking away the jury system of trial in cases where the excise laws are in question. I would say that all petty cases should be tried without a jury. Everything here—cost, distance, and sparse settlement—is against it. The whole system needs an overhauling. Things are done in such a slipshod manner that Government interests are neglected and the weak attempts made to uphold the law are a complete farce. No serious attempt has been made to enforce the liquor law, and liquor is sold here publicly. Charge $1,000 for license and then enforce the law. Had I the power to do it, I would enforce the law at any cost; for, as now carried on, we are teaching the rising generation to utterly disregard all law, and they are growing up to be our dangerous classes."

The foregoing are sample conversations with the best people in Alaska, and I could quote scores of them were it necessary.

Complaint was made on all sides by men of that large class who are too poor to purchase liquor in large quantities and are not influential enough to get permits from the customs authorities to bring it in on the mail steamer. That only a few favored ones—mostly liquor dealers—were allowed this privilege seemed to be a source of much indignation.

Exhibit marked B, handed me by the district attorney, shows the quantity of liquor that entered by permit from January 1, 1894, to March 10, 1895—fourteen months; during which time permits were issued to 34 persons to bring in several hundred barrels of distilled and malt liquors.

It seemed that the necessity to obtain a permit had ceased to exist when I was in Juneau in May, for representative salesmen for wholesale liquor houses at San Francisco, Seattle, and Portland were offering to deliver the liquor into the saloons at Juneau before they would ask pay.

This, in brief, is a true outline of the liquor question in Alaska, nor can it be remedied unless the Government goes to work to enforce or repeal the present prohibitory law relating to the liquor traffic in the Territory.

So long as the Government does not own or control a boat of any sort in a stretch of country 1,500 miles long, where the only road is a water-

way—so long as Government officers are compelled, because of lack of boat service, to stand helpless on shore while the smuggler plies his illegitimate trade beneath their very eyes, so long will the present state of affairs continue to curse Alaska and to be a disgrace to our whole country.

While at Juneau in May I was informed of an attempt that was about to be made to land a cargo of liquor destined for the Yukon Valley trade, and one of the most energetic inspectors in Alaska was on the watch to capture it if possible. He did not succeed, however, for by the time he secured a boat to transport him to the rendezvous of the smugglers he found he was twenty-four hours late. Speaking of the affair afterwards he said to me: "If I only had a boat that was always at my disposal I think I could break up a great deal of this smuggling; but, hampered as I am now, I am powerless, for no sooner do I hire a boat to go anywhere than the signal flies over the district. It will require the presence of a revenue cutter and half a dozen steam launches to kill off smuggling in Alaska." Every word of which I indorse.

The peculiar conditions surrounding the Alaskan liquor question have not been taken into account by many men of extreme views who have written or spoken on the subject; indeed, I question if they ever understood it. The truth is that if there is a climate under the sun where liquor is a necessity to man that climate is in Alaska, and consequently white men demand and must have it at any cost and in spite of all obstacles.

This is the reason we find 99 per cent. of the white population bitterly opposed to the present prohibitory law. This is why no officer can be found to attempt to enforce the law or a jury to uphold it. And where public sentiment and public opinion are so plainly against a law, no matter how well intentioned or good in itself, it is wise to heed the sign and amend or repeal it. During a conversation with the assistant district attorney, Mr. Hoggert, on this subject he said: "During the past four years $148,000 were spent in Alaska on cases of Indians and half-breeds who had gotten drunk or had peddled whisky without any lasting or definite results. Had we had a high license during that time we could have saved that expense to the Government and collected revenue enough to make the Territory self-supporting."

DESTRUCTION OF GAME-FOWL EGGS.

The stories told of the wanton destruction and the systematic stealing of wild game-fowl eggs have no foundation in fact.

I have traveled over thousands of miles of the coast line of Alaska, making diligent inquiry into this matter, without finding one person who knew anything about it. I have conversed with men who spent twenty to thirty years in the interior of Alaska, mining, hunting, and trading, men who had gone over every mile of habitable land in the Territory, without ever hearing of such a thing until I asked them. I have written to traders whose business takes them to the Upper Yukon country, far into the British possessions, men who travel from the source to the mouth of the great river; I have written to missionaries whose labors call them into all the native settlements on the Yukon, Kuskoquim, and other rivers, and the unvarying reply is, "We never heard anything about such things."

As a matter of fact, it is not yet known for certain where the wild fowl lay their eggs. They certainly find some island, marsh, morass, *swamp, or tundra* where man can not penetrate, or, at all events, where

he has not as yet gone nor is likely to go until the inducement is something of far more value than wild-fowl eggs.

DESTRUCTION OF DEER.

The destruction of deer in southeastern Alaska and in all the timbered portion of the Territory from Cape Fox to Port Moller, a distance of, say, 1,200 to 1,500 miles, is carried to such excess that it would hardly be credited in a civilized community.

I saw bales of the dried deerskins at many of the trading posts awaiting shipment, and when I asked what use had been made of the carcasses, I was told the deer were shot for their hides only.

I was informed by many men—officers and citizens—that, as the weather became warmer in the early spring, the smell from decaying deer carcasses became horribly offensive around the towns and villages. White men go out and kill the animals for fun, just to see who can knock down most in a given time. The natives kill them, because they can get a drink of whisky, valued at 25 cents, for every skin secured.

That such things have been allowed to continue at any time is to be deeply regretted; but that it is still allowed to continue after the natives on the seal islands have become a burden on the Government, and other tribes to the northward soon will be because of the wanton waste of their natural food supply on land and water, passes the comprehension of every sensible citizen who understands the present situation.

To the northward we are endeavoring to procure and foster the reindeer for a future food supply for the natives of that barren region, and it is a very laudable enterprise; but at the same time we allow the continued wanton destruction of the deer that covers the whole timbered part of Alaska—an empire as large as Texas. In the winter, when the snow is deepest and the animals can not make a way through the dense undergrowth beneath the timber, the so-called sportsmen assemble, and with dogs drive them out on the seashore, whose beaches are kept clean by the tides, where riflemen are ready, stationed in boats offshore, to begin the manly sport of shooting down helpless creatures, who can neither resist nor escape.

The following letter from an eyewitness explains itself:

STEAMER ALBATROSS, *Unalaska, August 28, 1895.*

MY DEAR SIR: I have not been able to unearth the notes I had on deer killing in Alaska. Briefly, their slaughter has been very great. During the winter of 1894 deer were killed and wasted in southeastern Alaska. Snow was unusually deep and the deer were forced to the beaches, which were left clear by the tides. Shooting was done from boats and canoes by both whites and Indians. I know of three Indians killing 175 deer from canoes in two days. Many whites shot for hides alone, and at many places hides could be bought for 35 cents each. I do not think that Indians should be prevented from shooting all kinds of game for their own needs, but killing for hides alone is certainly reprehensible, and if the rate of slaughter that has been going on for the past few years is continued, there will be very few deer left.

As the hides are of comparatively little value, their exportation might be stopped without causing any serious hardship to anyone, and of course when the hides become unsalable, the Indians will not kill many more than they need.

I have never heard of any destruction of birds or birds' eggs and can not imagine how there could be any remarkable waste of that nature, although I am familiar with the natural history of a considerable portion of the Territory.

Very truly, yours,

C. H. TOWNSEND.

Col. JOSEPH MURRAY.

FOXES.

After we pass the timber belt to the westward we find but very little game, the only valuable land animal on the Aleutian chain of islands being the fox, which until recently was a source of income to the natives, who spent the greater part of the winter hunting and trapping the animal.

All that has been said about the wanton destruction of deer can be said with equal truth about the wholesale poisoning by which whole islands are stripped of their foxes in one winter, and the native hunter and his children left to starve. So systematically is the work done and so desperate are the gang engaged in it that those who know them best are very careful to say least about them.

Members of the gang are to be found wherever there is money to be made suddenly by illegitimate means. In the fishing season they dam the streams, capture the salmon by the quantity, and sell them to the nearest cannery for what they will bring. They never take the trouble to tear down the dams. They are to be found in schooners in the early spring hunting the sea otter in forbidden waters. They go to Bering Sea after seals, and last season some of them made a successful raid on a trading post and robbed it of some 15 or 20 fine sea-otter skins, valued at $7,000 to $10,000.

Generally they wind up the year's plunder by selecting a group of islands, where they spend the winter poisoning foxes and securing the pelts. These are the men who are armed to the teeth with the best modern breech-loading arms; men who own swift-sailing schooners, in which they carry cargoes of whisky from British Columbia, and, following the Alaskan coast and Indian settlements, peddle it out to natives for whatever skins and trinkets they may have to spare, and having made them drunk, they slip in and rob them of everything.

No effort has ever been made to break up their nefarious business, and now they swagger into court as though the Government were an intruder, and listen awhile to the proceedings; just long enough to assure themselves that their tools at the bar and in the jury box are doing their duty—to the gang.

The perpetual presence of a revenue cutter that would patrol the inner waters of Alaska from Cape Fox to Chilcat and Sitka, aided by armed steam launches stationed at convenient points along the route, is the only practical method that I know of by which the present dangerous bands of outlaws can be suppressed.

With boats at his disposal whenever needed, the marshal could enforce the law, the collector could follow the smugglers to their rendezvous and break up the whole business at one blow. As it is now, all the officers in Alaska are utterly powerless to do anything, and the consequence is the laws are defied and derided and spat upon.

THE SEA OTTER.

The most valuable of all the fur-bearing animals in Alaskan waters and the most widely distributed is undoubtedly the sea otter, which, if properly protected by the Government, is capable of giving profitable employment to the native hunters for all time.

Beginning at Sitka they were to be found till very recently all around the coast and Aleutian Islands as far westward as Attou, a distance *of nearly 5,000* miles; but now, after a few years of hunting by the

modern methods of steamers and steam launches, they are seldom found outside a few favorably secluded spots. The steamer and the steam launch carry crews of white hunters into every nook and cranny on the coast and otter-hunting grounds where an animal is to be found, and every one of them is either killed or chased away from home—chased out to sea in many instances, where, if they happen to elude the hunter, they die of starvation, for they can not go down for food in deep water.

None but native hunters should be permitted to hunt sea otter, because it is almost the only support of all the native people from Cooks Inlet to Attou Island, and, if left to them exclusively, their simple methods of hunting on the water in skin boats, in which they dare not venture far from land, can not possibly drive the animal away from its customary haunts nor exterminate it.

I include in the term native hunters all whites who were married to Indian women prior to 1893, when the ruling was changed. The original ruling of the Department, made some twenty years ago, remained in force until 1893, and in the meantime many white hunters married native women, made homes, and raised families, and became natives of Alaska to all intents and purposes.

All their earthly possessions are invested in sea-otter hunting property, their families have been brought up to that business exclusively, the men themselves have made it their life work, and are now too old to change or to go away from home to attempt to make a living at any other business, and therefore it would be an act of gross injustice to disturb them at this late day. With the white man who married a native woman after the Department had given fair warning that he would not be given the rights of a native hunter the case is altogether different, and in his case the ruling of the Department ought to stand. The farther away from the native settlements the average Alaskan white hunter can be kept the better for the natives.

FUR SEALS.

Sailing from Sitka June 2, on board the U. S. revenue cutter *Rush*, Capt. C. L. Hooper commanding, I landed at St. George June 18, where I learned that the preceding winter had been one of unusual severity, that ice had lain around the island until June 15, and that, up to the date of my landing, very few female seals had appeared upon the rookeries.

The same story was repeated on St. Paul Island, where I spent the 19th and 20th of June visiting the principal rookeries and hauling grounds, after which I sailed away and visited many of the native settlements along the Aleutian chain, particulars of which will be given in my report on the condition of the native tribes.

I returned to the seal islands early in July and spent the 6th, 7th, and 8th on the rookeries observing their daily growth and expansion, as the cows were now arriving and the harems were well defined and the pups becoming numerous.

Being well aware of the fact, however, that it is not till about July 20 the rookeries are full for the season, I continued to follow the instructions which called me to other fields until July 18, when I returned to the seal islands, where, all being ready, I entered on the most careful and thorough inspection of the rookeries ever made by me. The result is shown in the inclosed table marked Exhibit A.

Beginning at St. Paul Island July 21, and completing the work at St. George August 14, I walked over the several rookeries and counted

every individual breeding male or bull seal who had a harem, noting and counting very carefully, too, every idle bull, or, in other words, every bull whose youth, strength, and vigor fitted and qualified him for a harem had there been cows to be found in sufficient numbers to supply them, which, unfortunately, there were not. So carefully and so systematically was the counting done that I feel I can recommend the figures as being as nearly correct and reliable as it is possible to get them.

Under the head of bachelors, or young males, are included all the seals on the islands other than those on the breeding rookeries, many of them being young females, too young to go on to the breeding grounds.

The bachelors have been estimated by me in the usual manner of estimating a bunch of seals, and they may very possibly run a thousand or two more or less than the figures given.

The number of breeding females or cows is based on an arbitrary average of 40 to the harem, or 40 cows to every breeding bull, as was adopted in and followed since 1891, though I am of the opinion it was an overestimate and that the harems never did and do not now contain an average of 40 cows each.

Having adopted that number, however, and having used it so long in our estimates, it was necessary to use it in the present instance for the sake of making fair comparisons when considering the steady annual decrease of the seal herd and the shrinkage of the rookery area.

Admitting the average number of cows in a harem to be less than 40—and I believe all who know anything about seal life on the rookeries will admit it is—then the total number of seals in the herd, as estimated by me, will be that much less in proportion.

By way of explanation I will say that when we first attempted to count the bulls, in 1891, for the purpose of getting, approximately, at the number of seals on the islands, it was deemed best to run the risk of overestimating the herds, lest Great Britain should object to our figures and insist on a recounting and, possibly, discover an error upon which to base an argument against us for the purpose of showing our anxiety to prove the wicked wastefulness of pelagic sealing.

As the seals were at that time too numerous and the harems too compact to admit of our going through and among them as we can now, we simply aimed to count every bull we could see and multiply the number found by two, on the ground that it was not possible to penetrate the mass far enough to see more than one-half of them.

And, lest that was not enough, we allowed an average of 40 cows to each harem, although we were quite certain it was too high.

I have gone over the rookeries every year, in season, since 1891, and I have noted the steady decrease of the herd from 500,000 then to 237,800 in 1895, when, because of the decrease, I was able to go in among the herd at the height of the season and count every bull on the islands.

Whether we erred in our estimates in our first crude efforts to get at the facts is of no consequence now, for the fact remains that, no matter what the actual numbers were in 1891, more than one-half of the whole herd has been exterminated since then.

Taking it for granted that the estimates were wrong, the proportion is still correct for all practical purposes, so that if we take the 500,000 of 1891 against the 237,800 of 1895, we find an average annual decrease of 52,440 for the five years beginning with 1891 and ending with 1895.

That the average annual loss has been greater than this can be

demonstrated from the statistics on file in the Department which show a pelagic catch of Alaskan seals to have been as follows:

1891	45,491
1892	46,642
1893	28,613
1894	55,668
1895 (estimated)	40,000
Total for five years	216,864

to which I add 60 per cent for the loss of pups that died on the rookeries because of the killing of their dams at sea during the nursing season.

I base the proportion of pups on what I witnessed this year in Bering Sea, where the logs kept by the sealers showed a killing of 60 per cent females for the season: 216,864 plus 60 per cent equals 346,982 seals taken or destroyed in five years by pelagic sealers who pay nothing whatever for the care of the animals.

I have estimated 40,000 as the catch for 1895. I left Bering Sea September 18, when 31,216 seals had been taken by pelagic sealers, of which number 18,868 or 60 per cent were females as per the logs of the several vessels. These females were nursing mothers in milk, whose young were left upon the rookeries while they went out to sea for food and rest, instead of which they met the pelagic sealer who, according to law, killed them and carried off their skins and left their helpless young to bleat themselves to death upon the rookeries.

In a former report I pointed out the absurdity of the regulations that would protect the female seals from the pelagic sealer during the months of May, June, and July, most of which time they are on the islands and beyond his reach, and that would give him a clear and free field in August, as soon as the mother seal takes to the water in search of much needed food and rest and when, above all other times, she needs protection.

The taking of 31,000 seals in the month of August, 1895, proves the correctness of my position, and renders it needless to dwell upon the absurdity of the position the nation has been placed in by the present sealing regulations.

I therefore most respectfully call the attention of the Department to the five suggestions made by me in my report of last year, the adoption of which I believe will forever settle the seal question.

SALMON.

Owing to a lack of traveling facilities to the several canneries during the fishing season, and to the fact that the whole revenue fleet of the Pacific Coast had to do duty in Bering Sea, I found it impossible to visit many of the canneries beyond Karluk, where I found that one of the rival establishments had sold out to the Alaska Packers' Association and quit the business, thus leaving only two principal competitors on the river—the Alaska Improvement Company and the Alaska Packers' Association.

Much crimination and recrimination were indulged in on both sides as each endeavored to show it was the other one who violated the law, and a string of complaints was presented by the Indians similar to those presented by the same party in 1894, and of which I treated in my report for that year.

I found the fishermen with their nets in the narrowest part of the Karluk River, and so systematically do they work the nets that I could

not see how it was possible for a fish to ever pass them to the spawning grounds.

Remonstrating with the foreman about such flagrant violation of the law and of his own promise, made in 1894, that such methods should not be continued, he replied: "I was sent here to take fish; my orders are to take them wherever I can find them, and I am going to obey my orders."

He afterwards explained to me how, during the storms when the water is too rough to allow the spreading of nets, enough salmon pass into and up the river to supply twice the quantity of spawn required for perpetuating the stock.

His rival across the river indorsed him in all this, but added: "As soon as the storm ceases the fishermen follow the salmon upstream to the playground and capture every one of them."[1]

Exhibit H, which accompanies this report, is a copy of a bill which I would like to see become law, for I believe it would, if enforced, put an end to the present wasteful methods of salmon slaughter in Alaska without doing injury to any honestly conducted enterprise in the Territory.

Exhibit C is a detailed statement of the salmon pack in Alaska for 1895, showing the number of fish taken, the number of cases put up, and the number of men—white, native, and Chinese—employed; also the cost of the tin consumed in the business, the amount invested in each plant owned by the Alaska Packers' Association, and other data as per instructions. The only item of prime interest I have been unable to secure is the selling price of the product of each cannery in the market to which it is consigned.

Through the kindness and courtesy of the Alaska Packers' Association I have learned that the average selling price in San Francisco, where the greater bulk of the whole pack is sold, is as follows: Silver salmon, 82 cents per dozen; red salmon, 92½ cents per dozen; king salmon, 92½ cents per dozen, and barrels of 200 pounds net, $4.75.

Considering that only very few silver salmon are taken and packed, it is safe to say that the whole number of cases put up in 1895 averaged $3.60 per case, or a sum equal to $2,229,764.40, which, added to the price of 16,857 barrels at $4.75, makes a grand total of $2,326,968 as the price realized on Alaskan salmon in 1895.

Exhibit F is a summary of the salmon pack of the Pacific Coast and Alaska for 1895, showing a grand total of 2,040,016 cases of 48 pounds each, the largest yearly catch on record. An examination of the figures shows that about one-third of this catch was taken from the streams of Alaska.

That adequate protection should be given to these streams by which the salmon may be perpetuated indefinitely goes without saying, and yet I find it the hardest part of all to make men believe there is any danger in the present methods of fishing.

That I might not be accused of setting my own individual opinion against men of practical experience, I addressed letters of inquiry to many gentlemen who are deeply interested in Alaska, whose homes are there, and who have everything at stake in the success or failure of the Territory.

To Mr. William Duncan (Father Duncan), of Metlakahtla, I sent a series of questions which I requested should be submitted to his people for consideration and the answers given to me when I called at the

[1] *The playground* is that part of the stream where the salt and fresh waters meet *and mingle,* in which the salmon prefer to live for several weeks before spawning.

settlement in the fall. As I did not have the opportunity to return by that route, I could not call at Metlakahtla as I intended, so Mr. Duncan very kindly sent me the following letter:

METLAKAHTLA, ALASKA, *October 15, 1895.*

MY DEAR MR. MURRAY: Your letter dated Unalaska, September 11, only reached me the latter part of last week. It had been detained at Kitchecan over a week through the lack of courtesy of the postmaster there.

On my arrival home last May, after the pleasant trip in your company to Sitka, I called a meeting of our people and propounded to them the several knotty questions you had suggested for our consideration. Last night we held another meeting, to a late hour, on the same business, and I was much pleased with the sensible way the natives took part in the discussion.

Question 1. "How to secure possession of Annette Island to our people and to such other Indians as may join them from surrounding bands, whether by individual or community title."

Our answer to this question is a unanimous voice in favor of a community title, and the town council being empowered to grant allotments of land for legitimate purposes to individuals as circumstances may arise calling for such action.

By this plan the present unity and regulations in the community could be preserved, whereas if individual titles of 160 acres were granted by the Government, the holder of each allotment being thus independent of the community, conflicting interests might result in a rupture which would be very prejudicial to the character and progress of the settlement.

Question 2. "How can the rights of the natives to the salmon streams be best secured and maintained?"

Our answer is, that, pending the Indians arriving at full American citizenship and responsibility, the Government might proclaim all salmon streams Indian reservations or Government property, and only allow fishing in them to proper persons and under proper regulations.

Such a law would prevent canning companies from taking exclusive control of the salmon streams, and might be made an important factor for bettering the condition of the natives.

At present Alaska is in danger of losing one of its greatest food supplies, through cannery operations. The Indians are born fishermen, and being permanent residents of the country fishing should, to a great extent, be in their hands, not as employees only, but as vendors of the salmon to the canneries.

Question 3. "How best to preserve salmon life in Alaska?"

Our answer to question 2 partly applies as answer to this. I will, however, enumerate our views:

(1) Let the salmon streams be declared Government property, and the fishing in them be absolutely controlled under Government regulations and by Government agents.

(2) Only permit a certain number of salmon to be taken from each stream, the number being decided by the capacity of the stream.

(3) Allow no modern barricades to be used in the streams, and even the simple ones which have always been used by the natives ought to be removed on Saturdays in each week.

(4) A limit should be placed to the pack of each cannery. I think 20,000 cases should be the limit. If, however, canneries can keep on increasing their pack and extending their time each year, as at present, fewer salmon each season will be left for reproduction.

(5) No cannery should be allowed to work on Sunday, and if fishing was forbidden after noon on Saturday till midnight Sunday of each week Sunday labor would cease. We strictly keep to this rule at Metlakahtla.

Question 4. "How best to suppress liquor traffic?"

(1) Our answer is, give the present liquor law a fair trial, and to that end every liquor saloon in Alaska should be suppressed and every drop of liquor now in it should be destroyed.

(2) Any person found smuggling or selling liquor in Alaska should be fined and imprisoned.

(3) Do away with the juries at the trial of liquor cases. Let the judges or commissioners appointed by the Government decide, upon certain given evidence, on the guilt of the persons arrested for offenses against the liquor law and an appeal allowed only to the supreme district court.

(4) Let every person found intoxicated be imprisoned, and in the case of natives the sentence to be commuted if the prisoner will give information leading to the conviction of the person or persons who supplied him with the liquors that intoxicated him.

(5) Let every informer against offenders in liquor cases (if his evidence leads to a conviction) be rewarded by receiving a part of the fine imposed on the offender.

(6) Let every commissioner in Alaska be instructed to swear in a goodly number of special police, without salary, especially among the natives, and let these be encouraged to assist in carrying out this law.

Question 5. "Should absolute title to land in Alaska be given to cannery corporations?"

Our answer to this is, we think that title to the land on which they have placed canneries should be given, but not to lands used only as fishing stations.

Question 6. "As to the granting of titles to land to whites in general."

We think that just so long as the Government refuses to give titles to land in Alaska the country will be overrun with an irresponsible floating population. Owing to the characteristics of the country this will be true, to a large extent, in any event; but the ownership of property would have a tendency to locate some permanent residents.

Question 7. "Should the exportation of lumber from Alaska be allowed?"

We think that until the country is more settled up the law forbidding the exportation of lumber, which now exists, should remain in force.

Question 8. "Indian citizenship."

We think that question had better be delayed. No doubt there are some natives ripe for the position, but the mass are not so. Let the missionary and school teacher continue their work till the goal be reached.

Yours, very respectfully,

W. DUNCAN.

Hon. JOSEPH MURRAY,
Fort Collins, Colo.

I respectfully ask particular attention of the Department to this letter of Mr. Duncan, for I believe that the adoption of many of his suggestions would be a full and satisfactory solution of the many knotty problems at present perplexing all who feel a worthy and laudable interest in the present good and future welfare of Alaska.

Another and an entirely different phase of the salmon question was brought to my attention by Mr. John C. Callbreath, of Fort Wrangell, who has been endeavoring, single-handed, to introduce and propagate salmon in streams where they did not exist, or from which they had been driven before. I promised him in the spring that I would visit his hatchery in the fall during my stay in the vicinity, but I did not get an opportunity to return that way.

The following letter was written afterwards by Mr. Callbreath and deserves careful consideration. Particular attention is called to that portion of it treating of special "property rights to the producer for all fish in excess of the natural product of the stream."

What Mr. Callbreath wants is assurance that after he has successfully stocked a stream with salmon, where none or but very few existed before, he will be given rights in the fish as against all other claimants who might desire to establish canneries on the stream. But here is his letter to speak for itself:

SEATTLE, WASH., *December 10, 1895.*

DEAR SIR: I regret my inability to have forwarded you an account of salmon hatchery at an earlier day. Business in the interior, from which point there was no means of communication, detained me until late in the fall. I have, however, a trusted superintendent trained under my own care, who has made a complete success up to November 1. I shall return soon and give the business my personal attention until the young fry are out and placed in their respective preserves.

My process of hatching is the same as that followed by the Government hatcheries at Clackamas, in the State of Oregon, and need not be described here.

My hatchery is situated on the western side of Etholine Island, on a lake discharging through a small stream, a mere brook, into McHenry Inlet—and producing from 3,000 to 5,000 sukkesh (*Oncorhynchus nerka*) salmon, an amount too insignificant to be fished by the canners or salters—and known among the Indians and fishermen as a "cuttus chuck," or worthless stream. The lake on which my hatchery is located is about three-fourths of a mile from tide water and contains about 500 acres.

I have built a dam 8 feet high across the creek a few yards above tide water, over which no fish unaided can pass. When the sukkesh start to ascend the stream for

spawning, they are impounded in a trap below the dam, picked up with a dip net, and carefully placed above the dam, from whence they quickly proceed up to the lake, where they lie in the still, deep water until ripe for spawning, a period of from two to six weeks. They then take to the small clear streams running into the lake, where they are again impounded by means of a weir and trap, and are stripped of their eggs. The eggs are then fertilized by stripping the male over them, placed in baskets, and set in troughs in the way usual in all hatcheries. A peculiarity about this class of salmon, the *Oncorhynchus nerka*, is that they will not frequent a stream unless it has a lake where they can lie and ripen before spawning, although they never spawn in the lake; all the other species of Alaskan salmon frequent the streams where they can obtain spawning ground indiscriminately whether they have lakes or not.

My object in damming my stream near tide water is to keep back all enemies of the young fry, such as sea trout, bull heads, sculpins, sticklebacks, etc.; by this means I have my lake and streams cleared of these scourges of the young salmon, as they are all salt-water fish, and only go up to the lakes for plunder, returning to salt water when their season is over. Of course there were many of them in the lake and streams the first year, but when they passed down over the dam they could never return. To protect the young fry from their enemies in the fresh water I believe to be the great secret of successful salmon propagation. There is no bar to the number of young that can be produced at the Government hatcheries, where the spawn in unlimited quantities can be obtained. But unless protected from their enemies while young (and everything large enough to swallow them are their enemies) a large proportion of them are destroyed in fresh water. In my own case, however, the supply of fish is limited, and all are utilized.

My lake now fairly swarms with young salmon where heretofore scarcely one could be seen. I find, however, that the sea trout and others named are not their only enemies. Their older brothers feed on the young fry. The young salmon remain in the fresh water where they were hatched fourteen to eighteen months, so they have from two to four months to prey on their young brothers. Then, after going to sea, they will return for a short time to their native streams for a cannibalistic feast, and here again in my case my dam acts as protector to the little ones, as when once they pass down they can not return. I have seen them in vast numbers about the size of sardines, and packed almost as close, below the dam, trying to get up, but they soon disappear and return to salt water. In connection with this matter of protecting the younger from their older brothers, I last year commenced an experimental process, which I feel encouraged to believe will prove successful; that is, by turning out a portion of my young fry in streams, on which there are lakes that fall into the sea by falls, over which no fish can pass. As a consequence, most of these streams and lakes are entirely barren of fish of any kind. There are three streams and lakes of this description contiguous to my hatchery. In the winter of 1894–95 I placed 1,000,000 young fry into one of these lakes, and the present season of 1895–96 will place 2,000,000 in another lake, and so keep on alternating until I prove whether they will return to these streams. At the same time I will keep on stocking my own hatchery lake with as many as I think it will sustain. If my experiment of stocking these heretofore barren lakes and streams proves successful, and I can see no reason why it should not, it will prove of great value to the salmon fisheries of this coast, as these lakes abound all along the Alaskan coast.

I commenced my hatchery in the fall of 1892, but owing to the impure water of the creek, which contains a large amount of impurities, had but indifferent success, turning out only about 600,000. I then moved my hatchery up to the lake, three-fourths of a mile, where I found streams of pure water and even temperature, 45° in summer and never below 38° in winter, and then the fish ripened more healthily, as they were in their natural water. In the fall of 1893, however, there was but a small run of salmon, but the eggs hatched much better and I turned out about 1,700,000 young fry. The season of 1894–95 we had a better run and turned out 1,500,000 in one hatchery lake and 1,000,000 in the barren lake before mentioned. The present winter of 1895–96 we will turn out 4,000,000 or over, having had a much larger run than usual, which we will distribute between our hatchery lake and two other barren lakes. These three barren lakes are situated, respectively, 3, 6, and 9 miles from our hatchery, and entails a good deal of labor and expense cutting trails and carrying the young fish in buckets to their nursery. There are a few cohoes (*Oncorhynchus kisutch*) that frequent our stream, but never more than 400. As they are a good fish, although not as valuable as the sukkesh, we also pass them over the dam and strip them. Their time of running is about six weeks later than the sukkesh.

Owing to the smallness of our hatchery stream, we have opportunities of observing the habits of the salmon with greater accuracy than on large streams. From close observation made for a number of years, I am of the opinion that no salmon return to the sea after ascending for propagating purposes, unless their natural habits of copulating are interferred with. I am, however, of the opinion that some of the males will return if they are kept from the spawning beds and from performing the

functions of nature for which they ascend; that is to say, if left to their natural state they will all die. And the females will all die anyway. But the males, if they do not connect with a spawning bed, their milt in some cases does not liquify, but remains solid, and some of them will return to the sea. But had they not been barred from the spawning beds their milt would liquify and they would all die.

We have discovered what seems to us to be a new variety of sea trout, quite similar to the rainbow, with the addition of a gristly hook, or turning up of the lower jaw, and fitting into a recess in the end of the upper jaw, completely covering the end of the snout and fitting in the recess so neatly that it will not be observed unless the jaws are open. I can find no description of a similar trout in the treatise sent me in June, 1894, by the Fish Commissioner, Hon. Marshall McDonald, which gave a full description of all the different species of trout. We have no alcohol or would have preserved a specimen.

According to the rule generally accepted by scientific men, the salmon will return four years from the time their parents enter the stream for spawning purposes, which will bring my first salmon back the coming summer, when I will be able to give you a more definite account of my venture.

I think, in cases like my own, where hitherto worthless streams are built up and made to produce large quantities of valuable fish that will assemble in the bays or inlets at the mouths of the streams, where they have been bred, that hitherto produced none, so to speak, a law of Congress should be passed giving property rights to the producer for all fish in excess of the natural product of the stream. It is held by legal men that I have consulted on the subject that I will have a property right in such fish, but it would be far better if such rights were reenforced by an act of Congress.

I have kept a careful account of all the sukkesh and cohoes that we passed over the dam from day to day, so that I can tell exactly the number of fish that the stream normally produced.

Hoping I may have the pleasure of meeting you on your return,

I remain, yours, truly,

JOHN C. CALLBREATH.

Hon. JOSEPH MURRAY,
Special Agent for the Protection of Salmon Fisheries in Alaska.

P. S.—I will be at Fort Wrangell during February, and should be pleased to hear from you.

J. C. C.

Now, here is a man who, though not wealthy, has spent money and many years' valuable time making experiments in one of the most useful and honorable of the arts—the production of human food.

Such men deserve a patient hearing and every possible encouragement, and in the hope of his getting both I respectfully recommend his very timely and practical letter to the serious consideration of the Department.

Exhibit D gives the names of the canneries and packing stations, Exhibit E shows the sailing distances one must travel from cannery to cannery in order to see all of them, and shows conclusively, I think, that in order to see all of them in one season it will be necessary to detail a revenue cutter to carry the agent.

A revenue cutter could make the trip between June 1 and July 20, completing the journey at the canneries in Bering Sea in ample time to report for patrol duty in August.

Exhibit G gives a summary of the Alaskan and Pacific Coast salmon pack from 1866 to 1895, both inclusive, showing at a glance that the Alaskan streams were drawn upon to their utmost capacity in 1891, when 789,294 cases of 48 pounds each were packed, with the result of a falling off of 40 per cent the following year.

The wisdom of protecting an industry that has yielded in the thirteen years of its existence 5,505,002 cases of salmon, worth $22,000,000, should not be lightly questioned or set aside, and when it is remembered that, excepting the civilized Indians with Mr. Duncan at Metlakahtla, there is not a resident cannery owner in Alaska, and that not one dollar of all the millions taken from her streams is left or spent in the Territory, it will be conceded, I think, by all fair-minded men that the least

the General Government can do is to protect the fish against extermination, and the native, dependent solely upon a salmon diet, in his right to an abundant supply of salmon for food. These two things are easy of accomplishment if immediate steps are taken, but if neglected much longer the task will be a most difficult one.

In order to protect the salmon streams the laws must be enforced, and it is, unfortunately, only too true that up to date there has not been a united attempt made to enforce them.

The United States commissioner at Fort Wrangell—one of the few fearless ones who only know their duty—wrote me a full account of how the law is disregarded, evaded, and not enforced by officers whose duty it is to uphold the law at all hazards. The letter covers a wide field, and is quite plain and outspoken, using men's real names, the printing of which in my report is not now considered necessary; I will therefore suppress names and quote only a few passages relating to salmon matters.

Case after case has been compromised at the instance of attorneys for their clients in criminal cases. Take one example: In July, 1893, Mr. J. G. Brady, who was then acting United States attorney in the absence of Mr. Johnson, entertained a complaint of the natives against cannery men for obstructing salmon streams. Mr. Brady prevailed upon Commander Burwell, of the U. S. S. *Pinta*, to convey him and other necessary officers to Klawak and Loring. * * * They came via Fort Wrangell and requested me to accompany them. The *Pinta* reached Loring in the night, and we found the river "fenced" from shore to shore, and about 4 tons of salmon in the traps and nets. We caused the arrest of Mr. Heckman, the superintendent of the cannery, and placed him under bond of $3,000, requiring him to appear before the United States district court at its next session.

The law, as you are aware, imposes a fine of $250 for every day a stream is obstructed. * * * Court did not convene until after the retirement of the district attorney, Mr. ———, and the appointment of his successor, Mr. ———, who agreed to accept the nominal fine of $100. * * *. Superintendent Wadleigh, of the Klawak cannery, was also placed under bonds, and although two terms of court have since been held he has not been required to appear. The ——— is lending a hand in helping to whitewash his case. * * *

These two cases, including the trip of the *Pinta*, have cost the Government more than $1,000.

The officers who placed the men under bonds have been humiliated, while the violators of the law, aided by officials disloyal to the Government, have won a great victory. * * *

I could cite many cases in which official positions are used to shield crime and defeat the ends of justice.

Your obedient servant, WM. A. KELLY, *Commissioner*.

Were it necessary to add to or confirm the commissioner's words, I would say that while at Loring in 1894 Hon. C. S. Hamlin, Assistant Secretary of the Treasury, accompanied by Capt. C. L. Hooper, commanding the revenue cutter *Rush*, attempted to go up the river in a small boat, but soon found themselves barred out by the identical "fence" mentioned in the commissioner's letter.

The Wadleigh case referred to was called in court at Juneau last May, and in my presence his attorney arose and said: Mr. Wadleigh had written and offered to pay as much as it would cost him to travel back and forth on the steamer from Klawak to Juneau, some $40, on condition that the Government dropped the complaint.

Now, here is a case where the man was taken red-handed in the act—he does not attempt denial—and yet, although it happened in 1893, he has not been brought to trial, but instead of answering the summons of the court he impudently writes back his ultimatum, which was seriously considered by the district attorney, who would have accepted it had I not been present and strongly protested against the whole farce.

In justice to the present district attorney for Alaska, I will say all these things happened prior to his appointment.

CONCLUSION.

Enough has been said I think to show the necessity of some radical changes in Alaska, the first of which should be the enforcement of the law.

I therefore most respectfully recommend the following:

First. The repeal of the present prohibitory liquor law and the substitution of high license.

Second. That a revenue cutter and three armed steam launches be permanently located in Alaskan waters.

Third. That the custom-house on Mary Island be discontinued and removed to a more desirable, because more useful, location in the Tongas Narrows.

Fourth. That Alaska be divided into at least two judicial districts, with one judge at Sitka and one at Circle City, on the Yukon.

Fifth. That three additional commissioners be appointed, one at Unga, one at St. Michaels, and one at Circle City.

Sixth. That a deputy collector (if not a custom-house) be located at Unga.

Seventh. That a marine hospital be erected at Unalaska. (Either of the trading companies will erect and furnish a building if the Department will furnish medicines and a physician.)

Eighth. That Alaska be allowed a Delegate to Congress.

There are many important matters that I have not referred to in this report, such, for instance, as the condition of the native tribes on the Aleutian Islands and in southeastern Alaska; schools and post-offices on the Yukon River and in the great interior—all of which will be dealt with in a future report.

The proposed changes are really necessary to the present and future welfare of Alaska, and, because of the rapidly increasing white population flocking to the rich gold diggings, it is absolutely necessary that the law should be rigidly enforced. The wealth of Alaska in furs, fish, and gold, if properly protected by the Government, will be of immense value, which may be made to increase annually, but which, if neglected by the Government and left to the present system of no law at all, or what is far worse, lawlessness, will soon end in disgrace and disaster.

Very respectfully submitted. JOSEPH MURRAY,
Special Agent for the Protection of Salmon Fisheries in Alaska.

Hon. JOHN G. CARLISLE,
Secretary of the Treasury.

EXHIBIT A.

Number of seals on St. Paul and St. George islands, season of 1895.

ST. PAUL ISLAND.

Rookery.	Bulls with harems.	Cows.	Bachelors.	Idle bulls.	Total.
Northeast Point	1,725	69,000	9,000	1,000	80,725
Halfway Point	350	14,000	2,000	200	16,550
Lukannon	300	12,000	1,000	200	13,500
Katavie	200	8,000	300	50	8,550
Reef	1,000	40,000	5,000	500	46,500
Lagoon	50	2,000	50	.....	2,100
Tolstoi	400	16,000	.....	250	16,650
Middle Hill	.....	.....	1,500	.....	1,500
English Bay	100	4,000	800	100	5,000
Zapadnie	500	20,000	3,500	300	24,300
Total	4,625	185,000	23,150	2,600	215,375

Number of seals on St. Paul and St. George islands, season of 1895—Continued.

ST. GEORGE ISLAND.

Rookery.	Bulls with harems.	Cows.	Bachelors.	Idle bulls.	Total.
Starry Arteel	60	2,400	300	40	2,800
North	100	4,000	500	50	4,650
East	80	3,200	3,000	40	6,320
Little East	25	1,000	50	20	1,095
Zapadnie	110	4,400	3,000	50	7,560
Total	375	15,000	6,850	200	22,425
Total on both islands	5,000	200,000	30,000	2,800	237,800

EXHIBIT B.

Liquors cleared from Puget Sound for Alaska, January 1, 1894, to March 10, 1895.

Date.	Permit No.	Kinds and quantities.	Consignee.	Name of vessel.	Date cleared.
Jan. 6, 1894	51	1 barrel bottled beer	Adolph Myer	City of Topeka	Jan. 15, 1894
Dec. 22, 1893	46	1 barrel rye whisky	do	do	Do.
Do	46	1 barrel Bourbon whisky, 10 barrels beer.	C. F. Fueher	do	Do.
Do	44	1½ barrels California brandy, 1½ barrels California claret, 5 barrels beer, 3 barrels ale, 3 cases porter, 10 gallons sherry, 10 gallons Irish whisky, 10 gallons Scotch whisky, 10 gallons gin, 10 gallons rum, 1 case imported brandy, 1 case imported whisky, 2 cases champagne.	William Nelson	do	Do.
Dec. 21, 1893	41	1 gallon port wine, 1 gallon brandy.	C. J. Kostromehnoff	do	Do.
Jan. 5, 1894	50	6 bottles China liquor	Hung Sing Gee	do	Do.
Dec. 6, 1893	39	1 case whisky, 1 case wine, 1 case porter.	Duncan McKimon	do	Do.
Jan. 2, 1894	49	1 barrel beer	W. C. Mills	do	Jan. 30, 1894
Dec. 22, 1893	45	1 barrel porter	Chas. Giffey	do	Do.
Do	47	1 barrel whisky, 1½ barrels rum, 1½ barrels brandy, 1 barrel porter. 1 barrel beer.	Wm. Mulcahy	do	Do.
Dec. 6, 1893	37	30 gallons claret wine	C. S. Johnson	do	Jan. 15, 1894
Feb. 7, 1894	57	5 gallons whisky	Smeby Bros	do	Feb. 17, 1894
Feb. 8, 1894	59	2 barrels beer	E. De Groff	do	Do.
Feb. 7, 1894	58	1 barrel whisky, 5 barrels beer, 2 barrels porter, 2 barrels ale, 6 cases Irish whisky, 6 cases Hennesy brandy.	W. Mulcahy	do	Do.
Do	55	1 barrel whisky, 1 barrel brandy, 8 barrels beer, 1 case champagne, 2 barrels whisky.	William Nelson	do	Do.
Jan. 20, 1894	53	1 barrel gin, 5 gallons Jamaica rum, 2 gallons Madeira wine, 12 gallons sherry wine, 30 gallons claret, 1 case brandy, 1 case champagne, 1 barrel ale, 1 barrel porter, 5 gallons port wine, 10 gallons whisky, 5 cases whisky.	E. De Groff	do	Do.
Jan. 16, 1894	52	1 case wine	W. P. Mills	Mexico	Feb. 27, 1894
Jan. 22, 1894	54	50 gallons whisky, 20 gallons brandy, 20 gallons port wine, 10 gallons alcohol, 50 gallons claret, 6 barrels beer, 2 cases gin.	J. C. Koosher	City of Topeka	Mar. 14, 1894

Liquors cleared from Puget Sound for Alaska, etc.—Continued.

Date.	Permit No.	Kinds and quantities.	Consignee.	Name of vessel.	Date cleared.
Feb. 23, 1894	61	2 barrels bourbon whisky, 10 gallons rum, 20 gallons brandy, 10 gallons port wine.	William Nelson	City of Topeka	Mar. 14, 1894
Feb. 24, 1894	63	3 barrels bottled beer	E. DeGroff	do	Mar. 29, 1894
Mar. 9, 1894	64	1 case whisky	Robert Reid	do	Do.
Feb. 20, 1894	60	3 cases wine	Mrs. R. C. Rogers	do	Do.
Mar. 9, 1894	67	1 case whisky	H. F. Swift	do	Do.
Do	66	1 gallon rum	W. M. Taylor	Chilkat	Apr. 7, 1894
Do	65	1 case ale, 1 case porter.	J. M. Davis	do	Do.
Do	68	1 barrel whisky, 1½ barrels brandy, 3 cases Irish whisky, 6 barrels beer.	W. Mulcahy	do	Do.
Feb. 23, 1894	62	10 gallons whisky, 1 case beer, 1 gallon brandy, 2 cases wine.	Robert Duncan, jr	City of Topeka	Apr. 13, 1894
Mar. 9, 1894	70	15 gallons port wine	Father Donskey	do	Apr. 28, 1894
Apr. 4, 1894	72	3 gallons whisky	Archy Campbell	do	May 14, 1894
Do	71	10 gallons alcohol	C. F. Feuher	do	Do.
May 19, 1894	93	5 gallons alcohol	F. D. Nowell	Rosalie	May 29, 1894
Do	96	2 barrels whisky, 1 barrel brandy, 2 cases gin, 20 gallons rum, 5 cases whisky, 5 cases brandy, 10 barrels beer, 10 cases porter, 10 cases ale, 2 cases champagne, 1 barrel port wine, 1 barrel sherry, 1 barrel claret, 1 barrel alcohol.	Max Endleman	do	Do.
Do	91	1 barrel beer	Mrs. Hammond	do	Do.
Do	92	do	F. Bach	do	Do.
June 4, 1894	100	3 barrels beer	E. De Groff	City of Topeka	June 12, 1894
Do	99	1 barrel beer	R. E. Rogers	do	Do.
May 9, 1894	84	4 barrels beer	E. De Groff	Queen	June 22, 1894
June 13, 1894	105	1 dozen bottles brandy	do	City of Topeka	June 29, 1894
June 18, 1894	107	15 barrels beer, 1 barrel sherry wine, 1 barrel whisky, 5 cases porter, 1 barrel port wine, 5 cases ale, 5 cases gin, 5 cases claret wine.	Max Endleman	do	Do.
June 28, 1894	108	10 barrels beer	E. De Groff	Queen	July 8, 1894
May 19, 1894	94	2 cases whisky	C. Spuher	do	Do.
July 1, 1894	116	20 barrels beer, 1 barrel brandy, 1 barrel port wine, 1 barrel sherry, 1 barrel claret, 3 cases champagne, 5 cases porter, 5 cases ale, 5 cases brandy.	Max Endlemen	City of Topeka	July 27, 1894
June 28, 1894	109	10 gallons whisky	E. De Groff	Queen	Aug. 6, 1894
June 18, 1894	113	1 case whisky	Karl Koehler	do	Do.
Aug. 3, 1894	120	10 barrels beer	E. De Groff	City of Topeka	Aug. 13, 1894
July 18, 1894	114	1 case whisky, 1 case wine, 1 case porter.	D. McKinnon	do	Do.
Aug. 3, 1894	119	1 case cognac, 10 cases port wine, 10 cases sherry. 10 cases whisky.	E. De Groff	Queen	Aug. 21, 1894
Aug. 13, 1894	123	1 case ale, 1 case porter.	J. Mont. David	City of Topeka	Aug. 31, 1894
Aug. 13, 1894	124	10 barrels beer	E. De Groff	do	Do.
Sept. 6, 1894	129	10 barrels beer	do	do	Sept. 19, 1894
Aug. 13, 1894	122	30 barrels wine	R. C. Rogers	Mexico	Sept. 25, 1894
Sept. 6, 1894	128	10 barrels whisky	E. De Groff	do	Do.
Oct. 4, 1894	139	10 barrels alcohol	do	City of Topeka	Oct. 11, 1894
Sept. 6, 1894	130	10 barrels white wine, 1 barrel claret.	do	Mexico	Oct. 25, 1894
Oct. 3, 1894	138	1 case whisky	R. C. Rogers	do	Do.
Sept. 25, 1894	132	1 barrel claret	Karl Koehler	do	Do.
Oct. 17, 1894	142	1 case whisky	Robert Reid	do	Do.
Do	145	5 barrels beer	Ed. De Groff	do	Nov. 10, 1894
Sept. 25, 1894	135	1 case whisky	M. Healy	do	Do.
Oct. 17, 1894	144	30 gallons whisky	Ed. De Groff	Chilcat	Nov. 21, 1894
Do	144	10 gallons rum	do	Mexico	Nov. 26, 1894
Dec. 19, 1894	150	1 bottle brandy, 1½ gallons whisky, 1 gallon port wine.	Dr. C. Theving	do	Do.

Liquors cleared from Puget Sound for Alaska, etc.—Continued.

Date.	Permit No.	Kinds and quantities.	Consignee.	Name of vessel.	Date cleared.
Nov. 16, 1894	147	1½ dozen Kimmel, 1½ dozen Benedictine, 1½ dozen absinth, 1½ dozen kirschwasser, 1½ dozen anisette, 1½ dozen maraschino, 1½ dozen Chartreuse, 1 case gin, 1 case champagne, 1 barrel porter, 1 barrel ale.	E. De Groff	Mexico	Dec. 28, 1894
Dec. 19, 1894	151	1 barrel bottled porter	Wm. Mulcahy	Chilcat	Jan. 3, 1895
Jan. 2, 1895	157	5 barrels bottled beer	E. De Groff	Mexico	Jan. 12, 1895
Do	157	12 bottles China liquor.	Sing Lee	do	Do.
May 4, 1894	82	5 gallons alcohol	E. Valentine	Chilkat	Jan. 23, 1895
Jan. 2, 1895	155	12 bottles assorted liquors.	R. C. Rogers	City of Topeka.	Do.
Do	162	10 barrels beer	E. De Groff	do	Feb. 7, 1895
Jan. 19, 1895	159	6 dozen bottles porter	C. E. Tibbits	do	Do.
Jan. 2, 1895	154	1 barrel claret	C. S. Johnson	do	Do.
Dec. 19, 1894	152	5 gallons port wine	Fred Hall	do	Do.
Feb. 15, 1895	170	10 gallons whisky	E. De Groff	do	Feb. 24, 1895
Do	169	5 gallons alcohol	do	do	Do.
Jan. 21, 1895	161	1 dozen brandy	do	do	Do.
Jan. 19, 1895	160	20 gallons claret	George Kyrage	do	Do.

The within permits are signed by Benjamin Moore, collector of customs, Sitka, Alaska.

PORT TOWNSEND, WASH., *March 1, 1895.*

EXHIBIT C.

Statistics of Alaska salmon pack, season of 1895.

Name.	Location.	Number of men employed.			Apparatus used.	Number of salmon taken.		
		White.	Native.	Chinese.		King.	Red.	Silver.
Bristol Bay Canning Co.	Nushagak	63	44	95	Gill nets	4,544	252,776	9,250
Alaska Packing Co	do	65	46	98	do	8,823	356,622	10,100
Arctic Packing Co	do	61	48	95	do	5,106	329,548	8,700
Do	Naknek	47	21	70	do	1,047	289,851	.....
Thin Point Packing Co.	Thin Point	28	20	.....	Seine	.....	23,453	.....
Karluk Packing Co	Karluk	84	48	142	do	.....	589,090	.....
Tanglefoot Bay Packing Co.	do	35	21	65	do	.....	172,049	.....
Hume Packing Co	do	84	52	142	do	.....	603,421	.....
Arctic Packing Co	Alitak	31	18	52	do	.....	174,568	8,321
Arctic Fishing Co	Kusiloff	62	48	77	do	25,199	324,277	.....
Chignik Bay Packing Co.	Chignik	89	31	110	Gill nets and seine.	.....	683,319	.....
Pacific Packing Co	Prince Williams Sound.	95	39	63	do	4,319	143,100	142,937
Pyramid Harbor Packing Co.	Pyramid Harbor	80	62	77	Gill nets	9,453	310,750	7,028
Glacier Packing Co	Fort Wrangell	41	71	55	do	3,294	133,509	154,183
Alaska Salmon Packing and Fur Co.	Loring	30	80	70	Seine	.....	14,733	435,368
Point Roberts Packing Co.	Koggiung	34	10	.....	Gill nets	405	143,800	.....
Ugashik Fishing Station.	Selina River	49	22	.....	Gill nets and seine.	.....	65,219	.....
Egegak Fishing Station.	Egegak	12	....	.....	Gill nets	.....	54,321	.....
Togiak Fishing Station	Togiak	12	....	.....	do	.....	1,800	.....
Total		1,002	681	1,211		62,190	4,646,215	775,887

Statistics of Alaska salmon pack, season of 1895—Continued.

Name.	Cases.	Barrels.	Steamers employed.	Lighters and boats.		Nets.		Sail tonnage employed.	Value of tin plate.
				Number.	Value.	Number.	Value.		
Bristol Bay Canning Co	33,434	.....	2	42	$18,000	80	$4,000	1,355	$19,360
Alaska Packing Co	34,632	.....	1	44	13,000	84	4,200	1,100	19,100
Arctic Packing Co	33,631	.....	1	43	12,500	83	4,100	1,040	19,600
Do	22,731	1,045	1	23	15,000	42	2,100	900	13,200
Thin Point Packing Co	.....	395	1	10	6,000	4	800	255	.....
Karluk Packing Co	48,379	.....	3	47	30,000	15	3,000	.....	.....
Tanglefoot Bay Packing Co.	15,277	.....	2	28	15,200	10	2,000	4,500	66,200
Hume Packing Co	47,500	.....	2	48	21,000	15	3,000	.....	.....
Arctic Packing Co	15,331	.....	1	23	11,000	4	800	1,350	9,100
Arctic Fishing Co	30,188	366	2	40	18,200	80	4,000	1,320	21,600
Chignik Bay Packing Co	70,050	.....	2	24	19,000	90	4,500	1,520	42,000
Pacific Packing Co	21,453	65	4	43	45,000	75	3,800	1,340	13,200
Pyramid Harbor Packing Co.	35,373	.....	1	31	18,000	50	2,700	1,132	21,000
Glacier Packing Co	27,416	.....	1	17	14,200	30	1,500	776	16,200
Alaska Salmon Packing and Fur Co.	32,554	.....	1	11	13,100	4	800	771	19,200
Point Roberts Packing Co.	.....	3,142	1	12	6,200	7	1,400	234	.....
Ugashik Fishing Station	.....	1,354	.....	13	2,500	6	1,200	555	.....
Egegak Fishing Station	.....	1,048	.....	3	600	3	600	126	.....
Togiak Fishing Station	.....	40	.....	2	400	2	400	130	.....
Total	473,949	7,455	26	504	278,900	684	44,900	18,404	279,760

Statistics of Alaska salmon pack, season of 1895—Continued.

Name.	Location.	Cases.	Barrels.
C. E. Whitney & Co	Nushagak	.....	1,043
Prosper Fishing and Trading Co	Kvichak	.....	2,300
L. A. Pederson	Naknek	14,253	300
Bering Sea Packing Co	Ugashik	12,007	.....
Norton, Teller & Co	do	.....	220
Lynde & Hough	Shumagin islands	.....	75
Alaska Improvement Co	Karluk	26,000	.....
C. D. Ladd	Cooks Inlet	.....	350
Pacific Steam Whaling Co	Prince William Sound	25,037	.....
Peninsular Fishing Co	Copper River	15,000	.....
Baranoff Packing Co	Baranoff Island	14,805	.....
North Pacific Fishing and Trading Co	Klawak	12,228	104
Boston Fishing and Trading Co	Yes Bay	14,100	.....
Metlakahtla Industrial Co	Meltakatta	12,000	.....
Miller & Co	Cordova Bay	.....	1,800
Cape Fox Packing Co	Cape Fox	.....	1,200
Various	Southeastern Alaska	.....	2,000
Total		145,430	9,392

EXHIBIT D.

Salmon packing stations in Alaska.

No.	Locality.	Name of company.	Cannery.	Saltery.	Herring.
1	Chilcat	Alaska Packing Association	2		
2	Port Althorp	Ford & Stokes		1	
3	Killisnoo	Herring Fishery			1
4	Red Fish Bay	Baranoff Packing Co	1		
5	Fort Wrangell	Alaska Packing Association	1		
6	Yes Bay	Boston Fishing and Trading Co	1		
7	Loring	Alaska Packing Association	1		
8	Port Chester	Metlakahtla Industrial Co	1		
9	Klawak	North Pacific Packing Co	1		
10	Cordovia Bay	Miller & Co		1	
11	Tolstoi Bay	do		1	
12	Port Ellis	Kniu Island		1	
13	Cape Fox			1	
14	Copper River, Delta Peninsula	Fish and Trading Co	1		
15	Eyak Village	Pacific Steam Whaling Co	1		
		Alaska Packing Association	1		
16	Cooks Inlet, Kussilo River	do	1		
	West side of Cooks Inlet	C. D. Ladd & Co	1		
17	Afognak (not in operation)		2		
18	Karluk River	Alaska Packing Association	2		
	Alaska Improvement Co		1		
	R. D. Hume & Co		1		
19	Alitak Bay	Alaska Packing Association (used up)	1		
20	Ugak Bay, Eagle Harbor	Oliver Smith	1		
21	Chignik Bay	Alaska Packing Association	1		
22	Pirate Cove, Popoff	McCollum Trading Co		1	
23	Thin Point	Alaska Packing Association		1	
24	Ugashil	Bering Sea Packing Co	1		
	do	Alaska Packing Association		1	
	do	Sullivan River Packing Co		1	
	do	Johnson		1	
25	Naknik River	Alaska Packing Association	1		
	do	Peterson		1	
26	Knichak River	Alaska Packing Association		1	
		Prosper Fish and Trading Co		1	
27	Nushagak	Alaska Packing Association	3		
	Fort Alexander	Whiteney Co		1	
	Total		27	14	1

EXHIBIT E.

Sailing distances from Cape Fox to the different salmon canneries in Alaska.

[Figures in parentheses are map numbers.]

	Miles.
(13) Cape Fox to (10) Cordovia Bay	80
(13) Cape Fox to (8) Port Chester	50
(10) Cordovia Bay to (9) Klawak	100
(8) Port Chester to (11) Tolstoi Bay	60
(8) Port Chester to (7) Loring	60
(7) Loring to (6) Yes Bay	25
(11) Tolstoi Bay to (5) Fort Wrangell	100
(5) Fort Wrangell to (12) Port Ellis	100
(9) Klawak to (4) Red Fish Bay	150
(4) Red Fish Bay to (2) Port Althorp	150
(2) Port Althorp to (3) Killisnoo	200
(3) Killisnoo to (1) Chilcat Inlet	200
(1) Chilcat Inlet to (14) Copper River Delta	1,000
(14) Copper River Delta to (15) Eyak village	50
(15) Eyak village to (17) Afognak	500
(17) Afognak to (20) Ugak Bay, Eagle Harbor	75
(20) Ugak Bay to (19) Alitak Bay	100
(19) Alitak Bay to (18) Karluk River	100
(18) Karluk River to (21) Chignik Bay	300
(21) Chignik Bay to (22) Pirate Cove	200
(22) Pirate Cove to (23) Thin Point	150
(23) Thin Point to (24) Ugashik	500
(25) Naknik River to (26) Kvichak River	25
(26) Kvichak River to (27) Nushagak	100
Total	4,375

EXHIBIT F.

Summary of salmon pack, 1895.

	Cases.
Columbia River	617,460
Alaska	619,379
British Columbia	512,877
Outside rivers	290,300
Total	2,040,016

		Cases.	
Columbia River		617,460	
Alaska (16 locations)		619,379	
British Columbia:			
Fraser River	347,674		
Skeena River	66,983		
Lowe Inlet	8,500		
Nass River	19,000		
Rivers Inlet	61,720		
Alert Bay	5,500		
Clayoquot	3,500		
		512,877	
Outside rivers and bays:			
Nehalem River	6,300		
Sinslaw River	8,552		
Coquille River	9,468		
Umpque River	10,300		
Tillamook River	5,000		
Alsea Bay	5,000		
Coos Bay	10,380		
Puget Sound (4 locations)	157,000		
Grays Harbor	18,000		
Shoalwater Bay	16,000		
Rogue River	14,000		
Sacramento rivers	24,000		
California rivers	6,300		
		290,300	
			2,040,016

EXHIBIT G.

Alaskan and Pacific Coast salmon pack, from 1866 to 1895, both inclusive.

Year.	Columbia River.	Outside rivers and bays.	British Columbia.	Alaska.	Total.
1866	4,000				4,000
1867	18,000				18,000
1868	28,000				28,000
1869	100,000				100,000
1870	150,000				150,000
1871	200,000				200,000
1872	250,000				250,000
1873	250,000				250,000
1874	350,000	2,500			352,500
1875	375,000	3,000			378,000
1876	450,000	33,900	9,847		493,747
1877	460,000	46,300	67,387		573,687
1878	460,000	66,500	113,601		640,101
1879	480,000	61,000	57,394		598,394
1880	630,000	88,200	61,300		779,500
1881	551,000	229,700	175,675		956,375
1882	541,300	249,300	255,061		1,045,661
1883	629,400	198,000	243,000	36,000	1,106,400
1884	656,179	122,800	138,945	54,000	971,924
1885	524,530	100,250	106,865	74,850	806,495
1886	454,943	170,400	163,004	120,700	909,047
1887	373,800	231,900	201,990	190,200	997,890
1888	367,750	212,000	135,600	427,372	1,142,722
1889	325,500	265,734	414,400	709,347	1,714,981
1890	433,500	102,123	409,464	688,332	1,633,419
1891	390,183	82,447	314,813	789,294	1,576,737
1892	481,900	160,800	221,797	461,482	1,325,979
1893	425,200	209,496	590,229	645,545	1,870,470
1894	511,000	214,896	494,470	678,501	1,898,867
1895	617,460	290,300	512,877	619,379	2,040,016

EXHIBIT H.

A BILL to amend an act entitled "An act to provide for the protection of the salmon fisheries of Alaska."

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the act approved March second, eighteen hundred and eighty-nine, entitled "An act to provide for the protection of the salmon fisheries of Alaska," is hereby amended and reenacted, as follows:

SECTION 1. That the erection of dams, barricades, fish wheels, fences, traps, pound nets, or any fixed or stationary obstructions in any part of the rivers or streams of Alaska, or to fish for or catch salmon or salmon trout, in any manner or by any means, with the purpose or result of preventing or impeding the ascent of salmon or salmon trout to their spawning ground, is declared to be unlawful, and the Secretary of the Treasury is hereby authorized and directed to remove such obstructions and to establish and enforce such regulations and surveillance as may be necessary to insure that this prohibition and all other provisions of law relating to the salmon fisheries of Alaska are strictly complied with.

SEC. 2. That it shall be unlawful to fish, catch, or kill any salmon or salmon trout of any variety, except with rod or spear, above the tide waters of any of the creeks or rivers of less than five hundred feet wide in the Territory of Alaska, or to lay or set any drift net, set net, or seine for any purpose, across the tide waters of any river or stream for a distance of more than one-third of the width of such river, stream, or channel, or lay or set any seine or net within one hundred yards of any other net or seine which is being laid or set in said stream or channel, or to take, kill, or fish for salmon in any manner or by any means in any of the waters of the Territory of Alaska, either in the streams or tide waters, from noon on Saturday of each week until six o'clock post meridian of the Sunday following, or to fish for, or catch, or kill in any manner, or by any appliances, except by rod or spear, any salmon or salmon trout in any stream of less than one hundred yards in width in the said Territory of Alaska between the hours of six o'clock in the morning and six o'clock in the evening of the same day of each and every day of the week.

SEC. 3. That the Secretary of the Treasury may, at his discretion, set aside certain streams as spawning grounds, in which no fishing will be permitted; and when, in his judgment, the results of fishing operations on any stream indicate that the number of salmon taken is larger than the capacity of the stream to produce, he is authorized to establish weekly close seasons, to limit the duration of the fishing season, or to prohibit fishing entirely for one year or more, so as to permit the salmon to increase.

SEC. 4. That to enforce the provisions of law herein, and such regulations as the Secretary of the Treasury may establish in pursuance thereof, he is authorized and directed to appoint one inspector of fisheries at a salary of ten dollars per day, and two assistant inspectors at a salary of eight dollars each per day, and he will annually submit to Congress estimates to cover the salaries and actual traveling expenses of the officers hereby authorized and for such other expenditures as may be necessary to carry out the provisions of the law herein.

SEC. 5. That any person violating the provisions of this act, or the regulations established in pursuance thereof, shall, upon conviction thereof, be punished by a fine not exceeding one thousand dollars, or imprisonment at hard labor for a term of ninety days, or both such fine and imprisonment, at the discretion of the court: *And provided further,* That in case of the violation of any of the provisions of section one of this act, and conviction thereof, a further fine of two hundred and fifty dollars per diem will be imposed for each day that the obstruction or obstructions therein are maintained after notice to remove the same. Said notice may be given by any Government officer or private citizen.

54TH CONGRESS, 1st Session. } SENATE. { DOCUMENT 137, Part 2.

REPORTS

OF

AGENTS, OFFICERS, AND PERSONS, ACTING UNDER THE AUTHORITY OF THE SECRETARY OF THE TREASURY,

IN RELATION TO THE

CONDITION OF SEAL LIFE ON THE ROOKERIES OF THE PRIBILOF ISLANDS,

AND TO

PELAGIC SEALING IN BERING SEA AND THE NORTH PACIFIC OCEAN,

IN

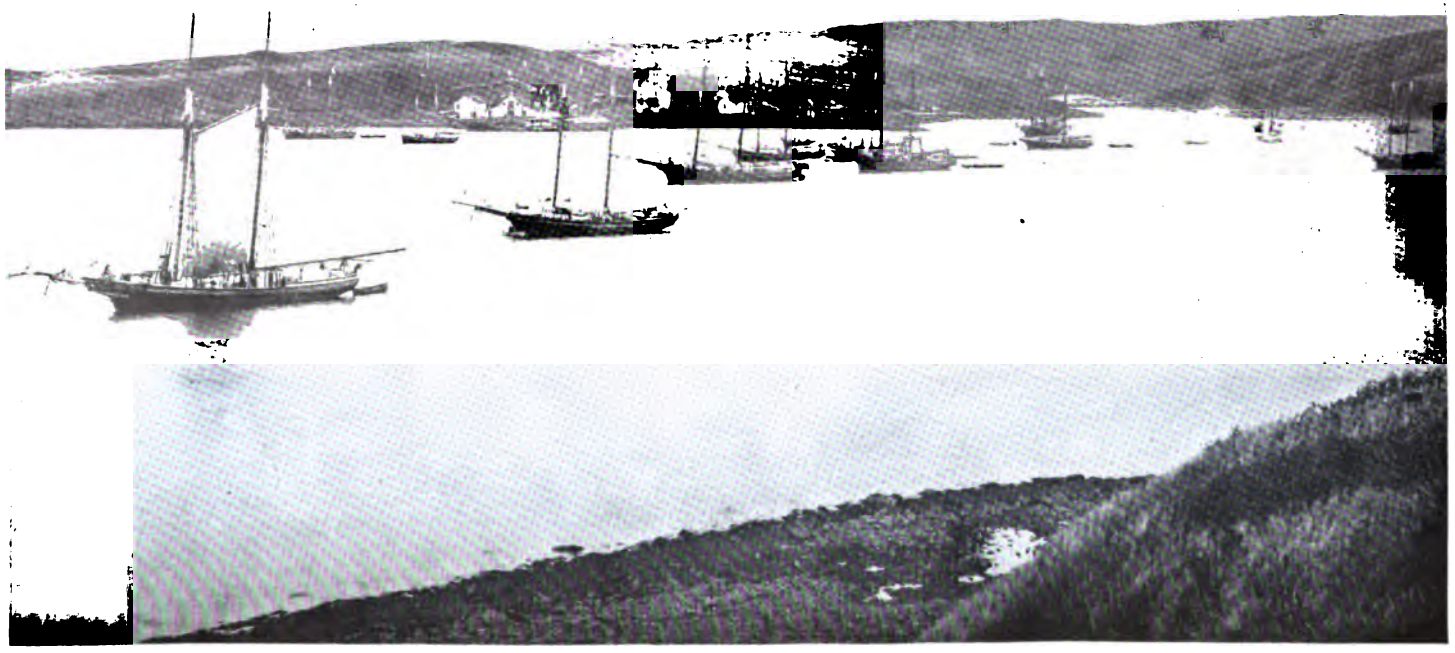
THE YEARS 1893-1895.

IN TWO PARTS.

PART II.

[With maps and illustrations. Results of investigations under the direction of the U. S. Commissioner of Fish and Fisheries.]

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1896.



A PORTION OF THE PELAGIC SEALING FLEET AT SAND POINT, SHUMAGIN ISLANDS, JUNE, 1893.

CONDITION OF SEAL LIFE ON THE ROOKERIES OF THE PRIBILOF ISLANDS, 1893-1895.

By C. H. TOWNSEND.

THE ROOKERIES IN 1893.

LETTER OF TRANSMITTAL.

WASHINGTON, D. C., *February 26, 1894.*

SIR: I have the honor to inform you that during the summer of 1893 an inquiry was conducted on the Pribilof Islands by the United States Fish Commission, in compliance with the following clause contained in the sundry civil appropriation bill for the fiscal year ending June 30, 1894, namely:

And the Commissioner of Fisheries is authorized and required to investigate, under the direction of the Secretary of the Treasury, and when so directed to report annually to him regarding the condition of seal life upon the rookeries of the Pribilof Islands.

The report upon this investigation by the naturalist of the Fish Commission steamer *Albatross*, Mr. C. H. Townsend, by whom it was conducted, is herewith respectfully transmitted, in accordance with your direction.

Very respectfully, M. MCDONALD,
Commissioner.

Hon. JOHN G. CARLISLE,
Secretary of the Treasury, Washington, D. C.

INTRODUCTION.

The report herewith submitted is based chiefly upon the observations made on St. Paul and St. George islands between July 11 and August 18, 1893, in conformity with the instructions issued for my guidance, and with the object of determining the conditions of seal life upon the rookeries of the Pribilof Islands during that period, as compared with the corresponding period of the previous year. It is accompanied by 11 charts and 46 photographic views (105 plates),[1] corresponding mainly with those made in 1892 by Mr. J. Stanley-Brown, special Treasury agent, and forming part of his report to the Secretary of the Treasury. Views were obtained from all of the photographic stations occupied by Mr. Stanley-Brown, but as the photographer of the Fish Commission

[1] This set of charts and photographs not transmitted for publication, the accompanying series for 1895, showing more reduced condition of rookeries, being deemed sufficient.

steamer *Albatross* likewise secured several excellent negatives of some of the rookeries from other good positions in 1892, I considered it important to duplicate them also, and prints from these negatives of both years have been included among the photographs transmitted. From the appended catalogue of photographs, giving the dates upon which the negatives were made in each year, it will be seen that, with one exception, corresponding negatives were taken on the same or very nearly the same date, foggy weather sometimes interfering with the work, but not sufficiently to allow of any material change in the condition of the rookeries. The exception was at Northeast Point rookery, on St. Paul Island, which the writer was unable to reach until the seals had spread slightly. The difference in perspective observable in the photographs of the two years is owing to the fact that the photographic lens used in 1893 had a somewhat different angle from the one employed by Mr. J. Stanley-Brown.

In comparing the corresponding photographs for the two years, it will be observed that only a few of them show any appreciable differences in the abundance of the seals upon the rookeries to which they relate; but my personal observations clearly demonstrate that a moderate decrease in the number of seals and slight changes in their distribution did occur between the summer of 1892 and that of 1893, as described below, these facts being also more plainly brought out by a comparison of the charts.

In this connection, it seems proper to explain that my acquaintance with the seal rookeries of the Pribilof Islands has not been limited to the investigation of last summer. I first visited these islands during June and September, 1885, at which time the rookeries were in their prime, pelagic sealing, just then beginning, having produced scarcely any effect upon the islands. Compared with the vast herds then observed, the body of seals now on the rookeries appears as a mere remnant. As the naturalist of the steamer *Albatross*, I also made observations on these islands from July 28 to August 10, 1891, and again between June 30 and August 14, 1892, during a part of this latter period having been temporarily attached to the revenue-steamer *Corwin*, then engaged in following the breeding female seals out to their feeding grounds, on which, up to distances of 200 miles from the islands, specimens obtained by means of firearms were found to be in milk and to have undigested food in their stomachs.

Recognizing the importance of designating the photographic stations previously referred to, so that they may be found without delay in future years, I have marked many of those located near permanent rocks or bowlders with their numbers in white lead, and I would respectfully suggest that this work be completed next season. The rookeries at which the stations have been so designated are Great East, Little East, North and Starry Arteel, on St. George Island; and Reef and Zapadnie, on St. Paul Island.

ITINERARY FOR THE SEASON.

Accompanied by Mr. N. B. Miller, photographic assistant, I was landed on St. George Island by the steamer *Albatross* on the morning of July 11, and remained there until the 15th. Zapadnie rookery was photographed on the 13th; North rookery in the morning and Starry Arteel rookery in the afternoon of the 14th; the East and Little East rookeries during the morning of the 15th. The areas covered by the seals at each of these rookeries were plotted upon the charts on the same dates.

We took up our quarters on St. Paul Island on July 16, and on the 17th attempted to photograph the rookery at Northeast Point, but a dense fog prevented. Later in the day, however, we succeeded in photographing Ketavie and Lukannon rookeries. During the 18th, 19th, 20th, and 21st, work was entirely interrupted by fog. The 22d proved clear, and permitted us to obtain plates of Reef rookery in the morning, and of Tolstoi and Zapadnie rookeries in the afternoon. A dense fog continued from the 23d to the 25th inclusive, followed by clear weather on the 26th, when we visited and photographed Northeast Point rookery, the writer remaining there overnight to complete his observations. Polavina rookery was photographed in the afternoon of the 28th, and on the 29th observations were made at Tolstoi and Reef rookeries.

A severe storm prevailed during the 30th, and on the following day I visited that part of Reef rookery lying under the cliffs for the purpose of ascertaining to what extent young pups may have been destroyed by it, but I found the damage slight. In the afternoon I visited Zapadnie rookery, and Mr. Miller returned on board the *Albatross*.

On August 1 photographs were obtained of Lagoon rookery and of Reef rookery from Village Hill. The 2d and 3d were spent in making general observations; from the 4th to the 7th fogs and storms prevailed; on the 8th visits were paid to Lukannon and Ketavie rookeries, and to the rookery on Sea Lion Rock. On the 9th I secured photographs of Northeast Point rookery from Hutchinson Hill, but the weather was rainy or foggy from the 10th to the 13th, permitting only of brief examinations being made of Reef and Ketavie rookeries. August 14 I visited Tolstoi rookery and found several hundred dead seal pups, nine-tenths of which had undoubtedly been killed under the cliffs during the recent storm. Their bodies were lying just along the line of debris left by the highest wash of the waves, and as they were mostly near the commencement of the sand beach, they had evidently been swept from the narrow rookery at the foot of the cliff extending out to the point.

On August 16 I was again transferred to St. George Island, where I spent that and the two following days in reexamining the several rookeries. They were all well covered by the spreading out of the seals which takes place in August, and makes the rookeries look larger than in July. A large proportion of the young pups were also swimming about the adjacent kelp beds off Little East rookery. In the afternoon of the 18th I rejoined the *Albatross*.

CONDITION OF THE ROOKERIES.

ST. PAUL ISLAND.

Northeast Point rookery.—The seals along the eastern side of this rookery were found distributed as in 1892, but undoubtedly much more thinly in the immediate vicinity of the point. Along the western side they were hauled out a little farther back, owing perhaps to the later date at which the observations were made. One or two breaks in the beach line had closed since the preceding season, but no increase can be noted on account of the thinning at the point. It is, therefore, probable that no appreciable change has taken place in the total number of seals on the rookery since 1892. No seals whatever from this rookery have been killed for several seasons. Photographed July 26 and August 9.

Polavina rookery shows a decrease in seals, although the usual area is occupied. *It will be noticed* in the photographs of the main rookery

(Station G) by the thinly covered spaces. There was also a perceptible thinning among the small bands of breeding seals under the bluffs between Little Polavina and the main rookery. Photographed July 28.

Little Polavina rookery has apparently suffered a slight decrease. The wide hauling ground between this rookery and the main Polavina was practically bare throughout the season, seals being seen generally close to the bluff in the vicinity of the slopes that give access from the beach. Photographed July 28.

Lukannon rookery.—On that part of this rookery where the seals are crowded, chiefly between the low bluff and the beach, there has been no apparent change, but there were certainly fewer seals than in 1892 upon the hill that divides this rookery from Ketavie. The hauling ground had largely changed from the slope at the west end of the rookery to the sand beach just north of it, as shown in the photograph taken at station 26. Photographed July 17.

Ketavie rookery, now the thinnest rookery on the islands, shows a perceptible decrease since 1892. This decrease is distinguishable in some, if not all, of the photographs of the rookery. Photographed July 17.

Reef rookery.—The hauling grounds at this rookery have not been delineated upon the chart for the reason that the bachelors were driven too often to permit of their lying in a perfectly natural condition. This rookery shows a shrinkage under the low bluffs just north of Garbotch (indicated on the chart), but otherwise there has been no change that I can detect. There was a loss of one or two hundred pups from the storm of July 30, 1893. Sea Lion Rock, lying just off this rookery, was visited and found to be very evenly occupied by breeding seals. The central portions of Reef Point, over which the bachelors travel more or less, is becoming distinctively more thickly covered with grass from year to year. Photographed July 22.

Lagoon rookery remains unchanged since 1892. Photographed August 1.

Tolstoi rookery.—The photographs exhibit only a slight change or thinning out of the seals at this place, which is shown more distinctly on the chart. There was a loss of perhaps 500 young pups from the storm of July 30, 1893. They were swept from the narrow beach below the cliff and deposited in a windrow at high-water mark near the commencement of the sand beach to the northward. There was no other loss of pups here, with the exception of the scattered loss from natural causes. Photographed July 22.

Lower Zapadnie rookery showed no change in number of seals, with the exception of one or two breaks along the shingle beach. Photographed July 22.

Upper Zapadnie rookery is the most difficult seal area on the Pribilof Islands to examine, and as the weather did not permit the use of a boat, the larger bands of seals near the beach could not be approached without disturbing the tract of seals in their rear. There has, however, been a decrease of seal life here, which is, I think, noticeable on the photographs. Photographed July 22.

ST. GEORGE ISLAND.

East rookery shows very little change since last season, except in the distribution of bachelors, the main body of which had hauled out north of the pond instead of south of it as in 1892. Owing to the unfavorable points from which this rookery has to be photographed to avoid

disturbing the herd, the change that has taken place here is scarcely perceptible in the photographs. Although the same area is occupied by breeding seals as in 1892, and is so indicated on the chart, the change is there expressed by the words "Thinned out slightly since 1892." Photographed July 15.

Little East rookery presents the same appearance as in 1892. I am not able to detect any change, and the photographs taken there do not seem to indicate any. Photographed July 15.

North rookery.—The seals are disposed on this rookery much as in 1892, but a slight decrease is perceptible, which is also shown by the photograph taken at station 5. Photographed July 14.

Starry Arteel rookery.—The scattered fringe of seals along the main rookery visible in 1892 now seems to have been absorbed into the main body of breeding seals. The chart will be found to indicate a recedence toward the bluff at two or three points. Bachelor seals seem also to be less numerous and were not found distributed so far back as usual, the higher positions on the hill being mostly unoccupied this year. Photographed July 14.

Zapadnie rookery shows more shrinkage than any other of the St. George Island rookeries. The decrease is perceptible in the photograph taken at station 6. The main breeding ground on the hill slope by the bluff is decidedly scattered as compared with 1892, and there are two breaks in the narrow breeding ground along the beach. The hauling ground of bachelors is much more thinly covered, and seals were not found as far back as in 1892. Photographed July 13.

CONCLUSIONS AS TO CONDITION OF ROOKERIES.

Taking all the rookeries of the Pribilof Islands into consideration, it may be safely asserted that the total number of seals upon them has decreased to an appreciable extent since the summer of 1892. The annual increase of young seals has not, therefore, been quite sufficient to offset the loss caused by the continuance of pelagic sealing in the North Pacific Ocean. It is evident, however, that the closing of Bering Sea to sealing vessels during the period of the modus vivendi has had a most salutary effect upon the rookeries of the Pribilof Islands, and that their present condition, so nearly stationary as regards the number of seals since this regulation came in force, is distinctly traceable to the protection thus afforded.

ADDITIONAL PROTECTION FOR THE ROOKERIES.

The erection of watchhouses at all the rookeries and their connection with the villages by telephones and roads has been commenced, and the continuance of this work can not be too strongly urged. The organization of the natives into regular watchmen is not only desirable for the systematic care of the rookeries, but would be a most effective system of discipline for them, as a class of people living most of the time in enforced idleness.

A light mounted field piece, such as a Hotchkiss rapid-firing gun, would be a valuable aid in the work of protection. Sealing vessels have at various times approached the islands for the purpose of sealing or raiding the rookeries, and a thorough protection can not be assured during the absence of Government vessels, which must sometimes happen.

OPENING OF PART OF BERING SEA TO PELAGIC SEALING.

By the provisions of the recent treaty of arbitration, pelagic sealing will hereafter be permitted in Bering Sea after August 1 of each year outside of a radius of 60 miles from the Pribilof Islands. Notwithstanding that the use of firearms will be prohibited, the opportunity afforded by this privilege is likely to produce a very serious effect upon the seal herd belonging to the several rookeries whenever the vessels find continuous good weather. Seals, when in the water, can readily be killed by means of spears, and they are regularly taken in this manner by most of the Indian seal hunters of the Northwest Coast. Many sailing vessels have been accustomed to carry Indian spear hunters with their canoes in preference to the white hunters, who use guns and boats, and we may expect to see full advantage taken of the former method in the free waters of Bering Sea. The open season for seals coming, as it does, at the close of the sea-otter season, will also make available the entire force of Alaskan spear-throwing hunters, who will be the more eager to take advantage of the new privilege, in view of the recent restrictions placed upon otter hunting and the present scarcity of otters. The apparatus employed in the latter fishery is likewise largely adapted to the pursuit of seals. After the month of August, however, the weather soon becomes unsettled and stormy, thus somewhat limiting the period when pelagic sealing can safely be carried on.

Observations made upon the distribution of seals in Bering Sea between July 28 and August 13, 1892, by the steamer *Corwin*, showed conclusively that the nursing seals travel distances of at least 200 miles from the Pribilof Islands in search of food, and consequently that the closed area about those islands, having a radius of only 60 miles, affords them only a very partial protection. The effect of killing large numbers of these females, which must certainly take place, means also the destruction of their pups on shore through starvation and the more rapid thinning out of the herds upon the rookeries than has hitherto occurred. The complete protection of the fur seal in Bering Sea, together with such restrictions upon its killing in the North Pacific Ocean as have been provided by the treaty of arbitration, would no doubt permit a steady increase upon the rookeries where it breeds, but its pursuit in any manner within part of the area it occupies as a feeding ground during the breeding season may be expected to have a disastrous effect upon the breeding rookeries of the Pribilof Islands.

List of the maps showing the outlines of the rookeries on the Pribilof Islands, 1893.[1]

ST. PAUL ISLAND.

Northeast Point rookery	Chart A
Polavina rookery	Chart B
Ketavie and Lukannon rookeries	Chart C
Reef and Garbotch rookeries	Chart D
Tolstoi and Lagoon rookeries	Chart E
Zapadnie and English Bay rookeries	Charts F and G

ST. GEORGE ISLAND.

Starry Arteel rookery	Chart H
North rookery	Chart I
East and Little East rookeries	Chart J
Zapadnie rookery	Chart K

[1] *This set of maps* not transmitted for publication, the accompanying set for 1895, [illegible] more reduced area of rookeries, being deemed sufficient.

List of the photographs of the seal rookeries on the Pribilof Islands taken during July and August, 1893, by N. B. Miller and C. H. Townsend, showing the dates on which they were made, and also the corresponding views for 1892. [a]

ST. PAUL ISLAND.

Rookery.	Station.	Number of plates in each view.	Dates on which taken.	
			1893.	1892.
Northeast Point	1	1	July 26	July 17.
	2 (north)	1	....do ...	Do.
	2 (south)	1	....do ...	Do.
	3	3	....do ...	Do.
	4	1	....do ...	Do.
	5	5	....do ...	Do.
	5	5	Aug. 9	Aug. 6.
	6	2	July 26	July 20.
	25	1	....do ...	Do.
Polavina	21	2	July 28	Do.
	22	2	....do ...	Do.
	23	2	....do ...	Do.
	24 (near)	1	....do ...	Do.
	G	5	....do ...	July 21.
Kannon	12 *b*	2	July 17	July 19.
	26 *b*	2	....do ...	July 14.
Netavie	13	3	....do ...	July 19.
	14	1	....do ...	Do.
	14½	5	....do ...	Do.
	15	2	....do ...	Do.
Reef	16	3	July 22	Do.
	17	5	....do ...	Do.
	18	2	....do ...	Do.
	19	2	....do ...	Do.
	20	2	....do ...	July 20.
	Grass area	1	....do ...	No date.
	Village Hill	3	Aug. 1	July 18.
Lagoon	27	3	....do ...	July 22.
Tolstoi	11	3	July 22	July 19.
	F *b*	3	....do ...	July 20.
Lower Zapadnie	7	2	....do ...	July 18.
	8	2	....do ...	Do.
	8[a]	2	....do ...	Do.
Upper Zapadnie	9	2	....do ...	Do.
	10	2	....do ...	Do.

ST. GEORGE ISLAND.

East	9 (near)	2	July 15	July 15.
	A	2	....do ...	July 27.
Little East	B *b*	2	....do ...	July 28.
North	1	1	July 14	July 14.
	2	(*c*)	....do ...	Do.
	3	1	....do ...	Do.
	5	2	....do ...	Do.
Starry Arteel	E *b*	2	....do ...	July 28.
Zapadnie	D	5	July 13	Do.
	C	2	....do ...	Do.

[a] This set of photographs not transmitted for publication, the accompanying series for 1895, showing more reduced condition of rookeries, being deemed sufficient.
[b] United States Fish Commission station.
[c] One negative lost.

THE ROOKERIES IN 1894.

LETTER OF TRANSMITTAL.

UNITED STATES COMMISSION OF FISH AND FISHERIES,
Washington, D. C., February 23, 1895.

SIR: In accordance with your verbal request, I have the honor to transmit herewith a report upon the condition of the seal rookeries, Pribilof Islands, Alaska, during the season of 1894, the same being based upon observations made by one of the assistants of this Commission, Mr. C. H. Townsend, in compliance with the requirements of the act approved March 3, 1893.

Very respectfully, HERBERT A. GILL,
Acting Commissioner.

The SECRETARY OF THE TREASURY,
Washington, D. C.

INTRODUCTION.

The report herewith submitted is based upon observations made on the Pribilof Islands between July 12 and August 1, and again between September 9 and 13, 1894. It is accompanied by 11 charts and 38 photographic views, the former showing the outlines of the rookeries, the latter illustrating the condition of the most characteristic portions of each rookery, at the time of making the observations. The positions from which the photographs were made are identical with those from which similar views were taken in 1892 and 1893, while the dates of both charts and photographs correspond as closely with those of preceding seasons as the conditions of weather permitted. This report should be considered in connection with those previously submitted, as being one of the series intended to present the yearly changes in the conditions of the rookeries.

The steamer *Albatross* arrived at St. George Island on the morning of July 8, 1894, and remained there at anchor until the 12th without being able to effect a landing on account of stormy weather. Not wishing to detain the ship longer, it was decided to begin the work upon the rookeries of St. Paul Island, where the opportunities for landing are better, and, accompanied by Mr. N. B. Miller, laboratory assistant of the *Albatross*, and Mr. J. Stanley-Brown, I landed at Northeast Point on the evening of the 12th, the *Albatross* sailing for Unalaska at once.

July 13 was spent in examining and photographing Northeast Point and Polavina rookeries, and we reached the village by wagon in the evening, our baggage having been taken there from the Point on the U. S. S. *Ranger*. On the 14th we examined and photographed Zapadnie, Upper Zapadnie, and Tolstoi rookeries. On the 15th, clear weather continuing, we examined and photographed Reef, Ketavie, and Lukannon rookeries, thus completing the necessary photographic work for this island in less time than we had ever been able to do it before. I made a further examination of the rookeries of Zapadnie, Upper Zapadnie,

and Tolstoi on the 16th, and plotted upon the base maps the distribution of seals at Tolstoi and Lagoon rookeries on the 17th. Reef, Polavina, Ketavie, and Lukannon were revisited on the 18th for chart data.

Leaving Mr. Miller to develop the plates exposed on St. Paul Island, I sailed on the morning of the 19th for St. George Island on the U. S. S. *Alert*, and succeeded in landing the same evening. On the 20th I collected the necessary chart data for East and Little East rookeries, St. George Island. From the 18th to the 21st, inclusive, the weather was too stormy for photographic work, and it was not until the 22d that I got the first photographs on St. George Island, those of North rookery. The 23d proved stormy, but with better weather on the 24th I secured photographs of East and Little East rookeries. Chart data for North rookery were secured the same day, and I duplicated some photographs of North rookery taken in 1891. From the 25th to the 27th it was too stormy for photographic work, but I collected chart data for Zapadnie and Starry Arteel rookeries on the 27th. On the 28th I photographed the latter rookery.

On the 29th an opportunity was afforded for returning to St. Paul Island on the U. S. S. *Adams*, and, as the most important rookeries are located on that island, I returned without having secured photographs of Zapadnie rookery. I immediately recommenced work on the rookeries of St. Paul Island, spending the 30th at Northeast Point and Polavina rookeries, the 31st at Reef rookery, and August 1 at Lukannon and Ketavie rookeries.

The *Albatross* returned to St. Paul Island on the evening of August 1, and thinking that my time could then be spent more profitably cruising among the fleet of pelagic sealers and observing their work than by remaining longer on the islands, I went on board that evening accompanied by Mr. Miller.

My time while at the islands was spent on the rookeries, whether the weather was clear or stormy, Mr. Miller attending to the development of the plates, thus giving me ample opportunity for going over most of the rookeries two or three times. Satisfactory photographs were taken of all rookeries except Zapadnie, on St. George Island. Station 27 (Lagoon rookery) and the one on Village Hill (Reef rookery) were abandoned, as showing nothing on account of distance. The dates for photographing the rookeries of St. George Island were changed to those of St. Paul Island and vice versa, this change being rendered necessary, as explained above, by the uncertainty of the landings at the former island. St. Paul, moreover, being the more important island, is most deserving of attention, and, in the future, I would recommend the completion of the work on that island first.

Several of the photographic stations on the rookeries were marked with their numbers or letters in white lead, on the nearest permanent bowlders. The stations now marked are as follows:

St. Paul Island.—Reef, Ketavie, Lukannon, Lagoon, Zapadnie, and Upper Zapadnie (Stations Nos. 12, 26, 14, 14½, 15, 17, 18, 19, 20, 27, 7, 8, 8ª, 9, 10).

St. George Island.—East, Little East, North, and Starry Arteel (9, A, B, 1, 2, 3, 5, E).

For most of the remaining unmarked stations heavy stakes will have to be driven into the sand, few permanent bowlders being available.

The photograph of the grass area on Reef rookery was not duplicated owing to bad weather, which is to be regretted, as it would have shown how very rapidly this portion of the Reef is becoming grass-grown.

CONDITION OF THE ROOKERIES.

ST. PAUL ISLAND.

Northeast Point rookery.—Although a comparison of the charts and photographs of this rookery for 1894 with those made in 1893 may indicate a slight diminution of seals, I am not prepared to state that this is the case. Owing to unfavorable weather the observations of last year were made later than they should have been, after the spreading of the rookeries had commenced. The data for the present year having been secured earlier, the difference in the records should be accounted for accordingly. I note, however, an additional break in the belt of breeding seals in the immediate vicinity of the Point.

Polavina rookery.—Although the photographs from Station G show very little change in position, the rookery when viewed from other points appeared to have a well-marked break in the center, which will be found indicated on the chart. Good weather having followed very stormy weather, the seals had taken to the water to a noticeable degree when the photograph was made. I think that no actual decrease can be recorded.

Little Polavina rookery apparently exhibits no diminution since last year and very little change in position.

Lukannon rookery.—No perceptible change in the number or position of breeding seals was noticed here.

Ketavie rookery.—This small and gradually diminishing rookery, I believe, shows a shrinkage since last season, but not a very marked one.

Reef rookery.—No decrease is apparent. The change in distribution is slight.

Lagoon rookery remains unchanged since last year.

Tolstoi rookery.—The seals here are perhaps a little more concentrated at the north end of the rookery; but otherwise there is no change.

Zapadnie rookery.—The hill portion of this rookery is unchanged, but the very thin portion extending about a mile along the shingle beach exhibits several breaks never before noticeable.

While the fur seal, naturally so gregarious, returns year after year under normal conditions to its accustomed breeding grounds, there are indications that it is less at home upon tracts which are becoming thin, and is inclined to concentrate upon adjacent breeding tracts more thickly covered with seals. This appears to be the case with the above-mentioned Ketavie rookery, and in the case of Zapadnie to be borne out by the appearance of an increase upon the adjoining rookery of Upper Zapadnie. This scattered beach rookery is illustrated by one of the photographs.

Upper Zapadnie rookery.—An increase since last season being indicated here, I went over the ground very carefully, and, although it may not be apparent in the photographs, the chart will be found to show changes which I believe mean a slight increase.

ST. GEORGE ISLAND.

East rookery.—It is possible that this rookery has suffered a slight shrinkage since last season, but I found it difficult to decide that such was the case.

Little East rookery remains unchanged.

North rookery.—Slight and unimportant changes in distribution were observed, but no apparent decrease.

Starry Arteel rookery remains unchanged.

Zapadnie rookery.—There is a widening of the break along the beach portion of the rookery, but no decrease was noticeable.

STARVED SEAL PUPS, SAINT PAUL ISLAND, SEPTEMBER, 1894.

CONCLUSIONS AS TO CONDITION OF ROOKERIES.

At the time of my inspection in July, 1894, the seal rookeries of the Pribilof Islands, taken as a whole, were found to be in nearly the same condition as in 1893. While the number of seals has slowly been diminishing, the decrease having continued even during the period when Bering Sea was closed to pelagic sealing, no decrease in general was noticeable this year up to the date of my departure from the islands on August 1. This is probably traceable to the cessation of sealing in the North Pacific Ocean on May 1, 1894, or soon thereafter. During the months of May and June the migrating seals become massed south of the Alaska Peninsula as they move toward the passes through which they enter Bering Sea, and a very considerable portion of the catch has been taken annually in that region by the fleet of pelagic sealers. By reason of the cessation of pelagic sealing on May 1 of the present year, the seal herd was spared the excessive killing from which it has usually suffered there in the past, and the rookeries, in consequence, presented approximately the same appearance as at the time of my last examination. This was contrary to previous experience, as an annual decrease had always been observed during the several preceding years.

Circumstances affecting seriously the welfare of the seal herd arose, however, before the close of the present season, necessitating a second and later examination of the rookeries, which revealed an alarming change in their condition. By the award of the Paris Tribunal of Arbitration, Bering Sea, with the exception of a zone of 60 miles around the Pribilof Islands, was opened up to pelagic sealers after August 1, with the result of causing great destruction to the seal herd. The killing of over 31,000 seals belonging to these islands and consisting chiefly of nursing females, was followed, necessarily, by the loss, through starvation, of thousands of young seals upon the rookeries.

LOSS OF YOUNG SEALS IN SEPTEMBER AS A RESULT OF PELAGIC SEALING DURING AUGUST.

After finishing the work of inspection upon the Pribilof Islands on August 1, I cruised with the *Albatross* among the fleet of pelagic sealers until September 9, when I landed again upon the islands to investigate the loss of young seals, which was reported as becoming serious.

Thirty-eight vessels known to us, hunting just outside of the prohibited zone, took 31,542 seals during the months of August and September, these consisting for the most part of nursing females, which resulted in the additional loss, by starvation, of the young seals thus left without means of nourishment. Although sealing began on August 1, no dead pups were noticed on the rookeries until about September 1, after which time they were found in increasing numbers, and at the date of my departure from the islands, September 13, careful examination had disclosed a loss of at least 9,000 pup seals, with a prospective loss of nearly as many more found in an emaciated and exhausted condition. With the assistance of Mr. Miller, the resident agents of the Treasury, and Mr. H. C. Chichester, I counted 2,349 pups upon the following rookeries:

ST. GEORGE ISLAND.

North rookery, September 9 and 10, Townsend and Miller (whole rookery)	405
Starry Arteel, September 9, Townsend (whole rookery)	305
East rookery, September 10, Townsend and Agent Ziebach (hill slope only)	130
Little East, September 9, Miller (whole rookery)	140
Total counted	980

Zapadnie rookery and beach portion of East rookery not counted.

ST. PAUL ISLAND.

Garbotch (or Reef) rookery, September 10 and 12, Townsend and Chichester (west side only)	492	
Lagoon, September 12, Townsend, Chichester, and Treasury Agent Judge (whole rookery)	105	
Tolstoi, September 12, Townsend, Chichester, and Treasury Agent Judge (hill and nearer beach)	497	
Lower Zapadnie, September 12, Townsend, Chichester, and Treasury Agent Judge (whole rookery)	275	
Total counted		1,369
Total on both islands		2,349

On other rookeries showing a similar condition I compared the uncounted area with that already counted, estimating the total loss as follows:

Upper Zapadnie	350
Tolstoi (uncounted portion)	200
Reef	1,400
Lukannon and Ketavie	350
Polavina	550
Little Polavina	100
Northeast Point (greatest of all rookeries)	3,000
Total St. Paul Island, estimate for uncounted area	5,950
East Rookery (St. George, uncounted portion) 200	
Zapandie (St. George) 450	
Total St. George Island, estimate for uncounted area	650
Total uncounted, both islands	6,600
Total counted, both islands	2,349
Total loss, both islands	8,949

Persons familiar with the comparative area of the rookeries will see how low these estimates are.

The bodies counted were those of pups that had died within ten days or two weeks and were fresh, although greatly emaciated. No rotten bodies, such as might have died during the breeding season from injuries received on the rookeries, were included, although a limited number of such were seen.

The attempt to count weak, emaciated pups was given up, owing to the difficulty of separating any but the very weakest from the more active and strong pups. Large numbers of starving pups were observed, and they were, to the best of my belief, nearly as numerous as the dead ones. In counting it was found necessary to pass over the rookeries systematically, which resulted in clearing the section counted, and driving most of the seals into the water or farther inland, according to the direction from which they were approached. All adults and active pups moved off in a body, followed by the less active and starving pups, there being occasional weak, tottering pups unable to do so. These fell over frequently and seldom moved far. They were thin and gaunt, and clearly starving. The majority of the pups were strong and active and cows were observed everywhere suckling them. All dead pups were confined to the regular breeding grounds and were evenly distributed, indicating that they died near where their mothers had left them.

Young seals are very fat and seem to endure a month or more of *starvation* before they succumb. I have, from year to year, observed

STARVED SEAL PUPS, SAINT PAUL ISLAND, SEPTEMBER, 1894.

ccasional young seals brought into the villages on the Pribilof Islands o be raised as pets, but in no case have they fed, except when milk vas forced into them, and even then they did not live more than three veeks. Young seals continue to live entirely upon their mother's milk ntil late in the fall. During my examination of the rookeries, from ieptember 9 to 13, I found the females suckling their young as comnonly as they are observed doing a month earlier in the season. One andsome albino pup, as large as any of the others, I secured as a natral history specimen. It was coffee-colored, with white flippers. It 'as left upon a high rock, and finding, upon my return in the evenng, that two quarts of thick milk had run from its mouth, I photoraphed it. It weighed, after losing its milk, 18¾ pounds.

I dissected several dead pups, finding in all cases an almost complete isappearance of fat from under the skin and an entire absence of food f any kind in the stomach. Accompanying photographs of dead pups llustrate, in a measure, the condition in which they were found, but nost of the photographs are unsatisfactory.

List of the charts showing the outlines of the rookeries on the Pribilof Islands, July, 1894.[1]

ST. PAUL ISLAND.

Northeast Point rookery ..... July 13, Chart A
Polavina rookery ..... July 18, Chart B
Ketavie and Lukannon rookeries ..... July 15, Chart C
Reef and Garbotch rookeries ..... July 15, Chart D
Tolstoi and Lagoon rookeries ..... July 17, Chart E
Zapadnie and English Bay rookeries ..... July 14, Charts F and G

ST. GEORGE ISLAND.

Starry Arteel rookery ..... July 27, Chart H
North rookery ..... July 24, Chart I
East and Little East rookeries ..... July 20, Chart J
Zapadnie rookery ..... July 27, Chart K

List of the photographs of the seal rookeries on the Pribilof Islands, taken in July, 1894, by N. B. Miller and C. H. Townsend, showing the dates on which they were made. [a]

ST. PAUL ISLAND.

Rookery.	Station.	Number of plates in each view.	Date on which taken.	Rookery.	Station.	Number of plates in each view.	Date on which taken.
Northeast Point	1	1	July 13	Ketavie	14	1	July 15
	2 (north)	1	Do.		13	3	Do.
	2 (south)	1	Do.		14½	4	Do.
	3	3	Do.		15	2	Do.
	4	1	Do.	Reef	16	3	Do.
	5	5	Do.		17	5	Do.
	6	2	Do.		19	2	Do.
	25	1	Do.		20	2	Do.
Polavina	21	2	Do.	Tolstoi	11	3	July 14
	22	2	Do.		F	2	Do.
	23	2	Do.	Lower Zapadnie	7	2	Do.
	24	1	Do.		8	2	Do.
	G	6	July 26		8[a]	2	Do.
Lukannon	12	3	July 15	Upper Zapadnie	9	2	Do.
	26	2	Do.		10	3	Do.

[a] This set of photographs not transmitted for publication, the accompanying series for 1895, showing more reduced condition of rookeries, being deemed sufficient.

[1] This set of maps not transmitted for publication, the accompanying set for 1895, showing more reduced area of rookeries, being deemed sufficient.

List of the photographs of the seal rookeries on the Pribilof Islands, etc.—Continued.

ST. GEORGE ISLAND.

Rookery.	Station.	Number of plates in each view.	Date on which taken.	Rookery.	Station.	Number of plates in each view.	Date on which taken.
East	9	2	July 24	North	2	1	July 2
	A	2	Do.		3	1	Do.
Little East	B	2	Do.		5	2	Do.
North	1	1	Do.	Starry Arteel	E	2	July 2

OBSERVATIONS RELATIVE TO PELAGIC SEALING IN BERING SEA DURING THE SEASON OF 1894.

INTRODUCTION.

The report herewith presented includes the results of observatior made at sea between August 1 and September 20, 1894, together wit certain data subsequently obtained at Victoria, Port Townsend, Seattl and San Francisco. The work at sea was carried on in connection wit the cruise of the United States Fish Commission steamer *Albatross*, a that time detailed as one of the vessels of the Bering Sea patrol flee The cruising ground assigned to the *Albatross* was to the westward an southward of the islands, chiefly outside of the protected zone, bı trips were also made to the northwest and southeast of the island During the cruise sealing vessels were boarded whenever met with, an I accompanied the boarding officer at all times, for the purpose obtaining information in connection with their operations from day day. In addition to the data secured by the boarding officer, I copie from the sealer's log books all notes regarding the positions whe seals were taken, and examined all fresh skins not yet consigned to tl kenches.

The record of positions where seals were taken by Canadian vesse is incomplete, as most of those vessels continued sealing for some tin after being boarded, while others were not met with. Similar da obtained from American vessels at sea were finally secured in full aft their arrival at home ports.

Sealers were constantly questioned concerning sealing matters, a statements made by them will be found in the following pages.

I have, under a separate heading, called attention to the effectivene with which pelagic sealing was carried on in Bering Sea by the 38 v sels engaged in it. It will be seen, after proper consideration of tl point, how very destructive to the life of this industry the presence a larger fleet would be. In my report for last year I pointed out t loss of young seals that might be looked for upon the islands if a lar number of female seals were to be taken in Bering Sea during t breeding season. This has been borne out by the experience of t past season, 20,000 being the lowest estimate that can be made for de pups, and we may confidently expect to see a still greater loss of tl kind next season if sealing is continued on the feeding grounds. T results of the season's pelagic catch in Bering Sea were already app ent on the rookeries when I went over them from September 9 to 1 and will be still more so when the annual examination is made ne *July*. The rookeries in their present condition can not lose 50,000 se

INDIAN SEALING CANOE. SHOWING METHOD OF THROWING SPEAR.

in Bering Sea, in addition to the North Pacific catch, without such a loss being perceptible.

As stated under the heading referring to the condition of the rookeries in 1894, the beneficial results of the cessation of sealing in May and June were apparent on the seal islands in July. This would seem to indicate that a respite of two months, in addition to such protection as was afforded by the modus vivendi, would be sufficient to keep the seal herd in its present condition. We may also infer that any additional restrictions that might be placed on sealing in the North Pacific would count as a gain, and permit an increase in the herd in proportion to the protection afforded, provided, of course, that there be no increase in the size of the sealing fleet.

Accompanying this report are a series of photographs illustrating some of the features of sealing with spears, and also a chart showing the distribution of the seal herd on its feeding grounds in Bering Sea.

DATA OBTAINED FROM THE SEALING FLEET.

The following tables[1] contain the daily sealing data of the pelagic sealing fleet in Bering Sea during August and September, 1894, giving the catch of each vessel, sex of seals taken, latitude and longitude of each day's operations, with more or less data on the crew, boats, and hunters of each vessel. With exception of one vessel not yet returned it is complete for the American portion of the sealing fleet. The data for Canadian vessels are given for such vessels as I was able to board in Bering Sea. The remainder having turned in their log books to the collector at Victoria I could not complete the work when I went there.

A record of the daily operations of the pelagic sealing fleet, even in part, yields new and valuable information. It shows the number of males and females at different distances from the Pribilof Islands, the portions of Bering Sea most frequented by the seals, the exact number of days during the season when the weather permitted of seals being taken;[2] it is data upon which to base an accurate map of seal distribution during the breeding season, etc. These records, kept by the sealers in accordance with the regulations put in force by the Paris award, constitute the first accurate information of the kind and supply data respecting the seals at sea, of which we have long been in need.

The daily records of the sealers should have been collected by the custom-houses to which they reported, but it was neglected, and I have had to search for them, as some of the discharged masters carried their log books away with them, making it very difficult to collect the information.

The catch of the Canadian portion of the fleet in Bering Sea appears to be 26,341. By questioning many of the sealers at Victoria I ascertained it to be 26,312, which tallies very closely with the figures given in the report of the collector at Victoria, 26,341. This number, plus the American catch of 5,201, makes the Bering Sea pelagic catch of 1894 31,542, unless there were vessels sealing in Bering Sea of which we have no knowledge, which is very doubtful.

There were 27 Canadian vessels in Bering Sea and only 11 American vessels. The Canadian vessels hunting with Indian spearmen from Vancouver and Queen Charlotte islands were very successful, while the

[1] The tables referred to will be found appended to the report for 1895.
[2] This is partly worked out in the tables following for August and September.

American vessels, with the exception of two or three, made poor catches. Sealing with spears in Bering Sea has therefore been profitable to Canadian rather than American vessels.

In respect to the claim that Bering Sea weather is sufficiently unfavorable for sealing to afford the seals protection from excessive spear hunting, the accompanying tables, although based on incomplete data, show that there was only one day during the season, from August 1 to September 21, when seals were not taken, and it is possible that when all the data are accessible through exchange with Great Britain it will be shown that seals were taken daily throughout the season.

The same tables indicate that storms in Bering Sea are local in their nature, vessels to the westward of the Pribilof Islands having been hove-to, while others to the southward were making good catches.

COMMENT ON THE PROPORTIONS OF THE SEXES REPORTED BY THE SEALING FLEET.

I have compared the proportions of the sexes of seals taken in Bering Sea by the Canadian and American fleets, and having considered both in the light of depositions now in the possession of the Treasury Department, made by London furriers, I can not admit that the proportion of male and female seals reported by the vessels is correct. American sealers reported a greater proportion of females, and in no case reported more males than females, as some of the masters of Canadian vessels have done. The latter were sealing very close to vessels reporting from two to five times as many females as males. When I questioned the masters of the schooners *Favorite*, *Walter Rich*, *Henrietta*, etc., as to their alleged greater number of males, their explanations to me were that their seals were skinned in the canoes by the Indians, and the pelts thrown on deck as they returned after dark, and that under the circumstances they had no time to bother with inspecting skins minutely as to sex. Such returns are unreliable, and there is no doubt about the proportion of female seals taken by the Canadian fleet being much greater than reported. This is borne out by the sworn statements, now in possession of the Treasury Department, of Messrs. Martin and Teichmann, of London, as to the sex of seal skins derived from the pelagic catch of 1894 in Bering Sea and the North Pacific Ocean. These gentlemen personally inspected some of the largest consignments of seal skins taken in 1894 and found 85 to 90 per cent of them to be females.

Mr. Lupp, of San Francisco, a seal hunter of several years' experience, informs me that the catch of 1,400 seals made by the vessel he sailed with on the Japan Coast in 1892 consisted almost entirely of females with young, there being less than 50 males in the entire lot, and that of a catch of 1,100 seals taken by his vessel, the *Louis Olsen*, in 1894, in the same region, all were females but about one dozen.

Mr. John Fanning, who cruised as a hunter with the schooners *Dennis* and *Retriever*, informs me that nine out of every ten seals taken on the Japan Coast by him were females, and that when sealing off the Commander Islands eight out of every ten were females in milk. I questioned other sealers on this point, eliciting similar statements.

In view of the above statements of London furriers, the statements of masters of Canadian vessels as to the uncertainty of their method of ascertaining the sex of each day's catch, and the statements of Japan Coast sealers as to the great proportion of females in pelagic catches, *to say nothing* of our knowledge of the subject from results apparent

A PORTION OF THE CANADIAN SEALING FLEET, VICTORIA HARBOR, 1894.

on the Pribilof Islands, the returns of the Canadian sealers operating in Bering Sea may well be questioned. They report but 14,636 females in a catch of 26,341, while the American fleet reports 3,813 females in a catch of 5,201—a much greater proportion. Not one American sealer reported more males than females. One of them, the *Deeahks*—captain and all hands being Indians—reported only 155 males in a catch of 1,023, while seven Canadian sealers reported more males than females. One Canadian sealer, the master of the *Borealis*, apparently without guile, has come very near the truth in reporting only 90 males in a catch of 1,059 seals.

I ascertained upon inquiry at the custom-houses at Port Townsend and San Francisco that the catches of but three of the American sealers from Bering Sea had been examined by experts in furs to determine the proportions of the sexes represented. These were the *Therese*, *Jane Grey*, and *Rose Sparks*. The catch of the *Louis Olsen*, an American sealer, landed at Victoria, was examined by my colleague, Mr. A. B. Alexander, of the United States Fish Commission.

None of the others, either American or Canadian, were subjected to such an examination, but their returns, as a whole, are still capable of correction in the light of depositions by the London furriers, who received and inspected the bulk of the pelagic catch.

The examination of the catches of the four vessels named above shows the proportion of females to range from two-thirds to four-fifths of their catch. As to the catches of the *Ella Johnson*, *Deeahks*, *Stella Erland*, *Ida Etta*, *Columbia*, and *Allie Algar*, that of the *Deeahks* has evidently been faithfully recorded, while the others have at least placed themselves on the safe side. Of the Canadian fleet, the *Labrador*, *Aurora*, *Mary Ellen*, *Walter Earle*, *San Jose*, *Beatrice*, etc., reporting from two-thirds to three-fourths females, are also on the safe side, while the *Borealis* stands unique in reporting almost an entire catch of females (only 90 males in a catch of 1,149).

As to the *Sapphire*, *Ainoko*, *Walter Rich*, *Favorite*, *Henrietta*, etc., the less said the better. They are convicted of inaccuracy by their own admissions. If there was intention to deceive as to the proportion of the sexes in Bering Sea, discrepancies should have been guarded against, as comparisons with the returns made by the *Borealis*, *Deeahks*, *Walter Earle*, etc., are damaging.

The proportion of females in the Canadian catch has not been represented in good faith, as it does not correspond with what the fur trade know to be the actual conditions; with what nine sealers out of ten say about the composition of pelagic catches in general, and with what we known by count and observation to have been the loss of young seals by starvation.

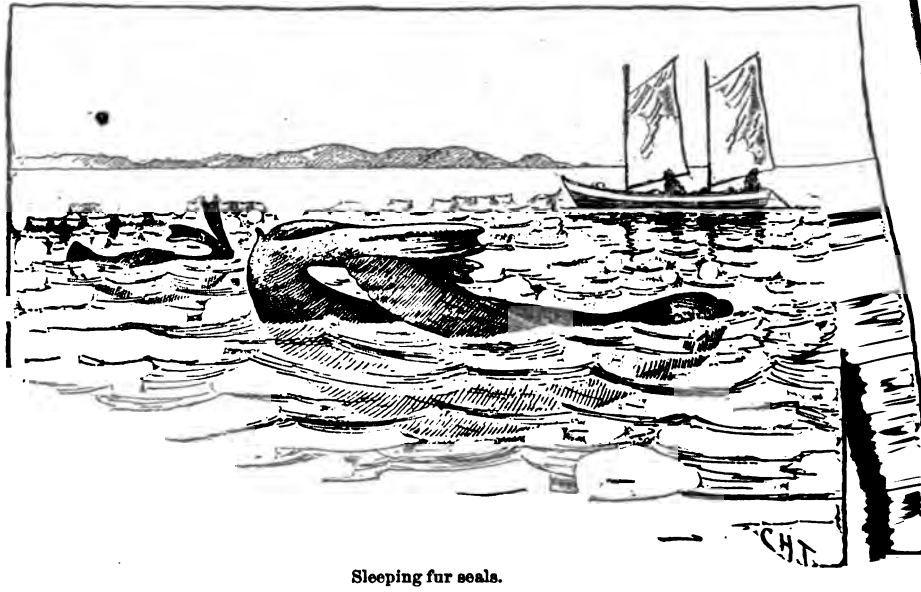
ABSENCE OF FEMALES FROM ROOKERIES AFTER AUGUST FIRST, AND EASE WITH WHICH THEY MAY BE TAKEN AT SEA.

On August 1, 1894, just before leaving the Pribilofs on an extended cruise on the pelagic sealing grounds, I examined two small rookeries very carefully (Ketavie and Lukannon), for the purpose of ascertaining the proportion of females upon the breeding grounds. On that date I estimated that about 80 per cent of the seals present consisted of males and young, clearly indicating the great extent to which the females were feeding at sea.

The cruising ground of the *Albatross* for the first week in August was far to the northwest of the islands, where very few seals were seen. On the 7th, *just outside the* protected zone and to the northwest of St.

Paul, we found seals in abundance. The sea being perfectly smooth, I went out in the dingey a few hundred yards from the ship and photographed several seals, showing their positions when asleep and awake. The distance at which we were able to photograph them was from 30 to 40 feet. In the three-quarters of an hour 26 seals were counted. Most of them were sleeping, and all were females, judging by size alone. The photographs show the customary attitudes. Seals sleeping at sea have little more than the nose, lower jaw, and hind flippers above water, the fore flippers being raised occasionally as the animal scratches itself or rolls slowly from side to side. The back is always down and deeply submerged.

As a rule sealing with spears is practicable only when seals are found asleep, the ordinary spearing distance being 30 to 35 feet. To the fur seal's unfortunate habit of sleeping much at sea is chiefly traceable its diminution, for it is at such times most readily approached by the pelagic sealer and taken with guns or spears. The number of seals to be observed asleep in Bering Sea is greater than elsewhere, the migration



Sleeping fur seals.

being over and the animals feeding at their natural habitat. It is a well-known fact of natural history that breeding male seals do not leave the rookeries during the breeding season, and that young pups can not leave the immediate vicinity of the islands until they depart on their first migration southward.

From the almost constant presence on the hauling grounds of the nonbreeding males, it is also well established that they do not leave the islands to any great extent. The females alone constitute a class that feed at long distances from the islands during the breeding season. Their excursions in search of food extend over 200 miles, and commencing soon after the birth of their young are continued to the close of the season. There can be no doubt but that the nursing females are the most constantly exposed of any class of seals to the destructive methods of pelagic sealing in Bering Sea, and that their capture during the breeding season is, of all the agencies tending toward the diminution of the seal herd, the one most to be deplored.

SLEEPING FUR SEAL. USUAL POSITION. AUGUST 7, 1894, BERING SEA.
ating back down, with hind flippers turned forward. Photographed at distance of 35 feet.)

FUR SEALS JUST AWAKENED, AUGUST 7, 1894, BERING SEA.

The opening of Bering Sea to pelagic sealing has proved the most fatal of all the provisions of the Paris award.

EFFECTIVE METHODS OF THE SEALING FLEET.

The effectiveness with which pelagic sealing may be carried on in a circumscribed hunting ground like Bering Sea may be more clearly set forth by directing attention to the number of hunting boats engaged during the past season. The sealing fleet consisted of 38 schooners, carrying from 6 to 20 boats or canoes apiece—the average number being about 12. The boats hunted in all directions, frequently going 10 miles away from the vessels to which they belonged, the hunting areas of the different schooners thus overlapping at times. I have often spoken canoes 8 miles from their schooners. Pursuing seals in this systematic way, 38 vessels carrying somewhat more than 450 boats, took 31,542 skins in six weeks, notwithstanding the fact that many of them were late in reaching Bering Sea from the Japan coast, and left early on account of having their North Pacific catches on board, for the purpose of being early in market, on account of the impatience of Indian hunters already wearied with the long Japan coast cruise, lack of provisions, or for other reasons.

THE USE OF SPEARS.

Of the Canadian fleet in Bering Sea, all but six schooners carried Indian hunters from Vancouver and Queen Charlotte islands. These natives have been taking seals off their own shores with the spear from time immemorial, and it was a fatal mistake on the part of the Paris Tribunal to underestimate the efficiency of spears in such hands, a fact doubtless well known to those having charge of the British side of the case.

The spear used during the past season is very similar to that figured by Scammon twenty years ago in writing of pelagic sealing by these natives.[1] The spear pole is 12 to 14 feet long, pronged, with two detachable barbed iron spear points, secured by a 30-yard line, the end of which is tied to the boat. When a seal is struck the barbed points slip off the pole, the latter being recovered after the seal has been pulled alongside the canoe and clubbed. Seals fight vigorously at such times and seldom fail to leave permanent marks of their sharp teeth on boats and canoes, while large bulls are very dangerous to handle.

Pelagic sealing is altogether impracticable for our own Aleut natives, their light skin-covered bidarkies not being constructed to withstand such attacks as wounded seals make with their teeth.

CHANGE OF FEEDING GROUNDS.

The fur seal changes its feeding grounds in Bering Sea from year to year. The changes appear to be quite marked, and are doubtless dependent on the food supply. The pelagic catch for the summer of 1894 was made chiefly to the southeast of the Pribilofs, the rest of the catch being made south, southwest, west, and northwest of the islands. A small proportion only were taken along the border of the plateau.

Capt. J. W. Todd, of the sealer *Rose Sparks*, states that in 1889 he found seals plentiful to the northeast of the Pribilofs, and moderate numbers were to the northwest and southeast. In 1887, when sealing with the schooner *Lilly L.*, he found the herd chiefly to the southeast, taking 197 seals in two days.

[1] *Marine Mam.*, Scammon, p. 159.

Captain McCauley, of the sealer *Beatrice*, found seals plentiful 250 miles to the westward of the Pribilof Islands in 1891. Captain McLean, of the sealer *Favorite*, also reports a great abundance of seals to the westward of the islands in 1891 (latitude 56° 50′, longitude 173° 30′), ten canoes taking (with guns) 972 seals in three days.

Captain Guillams, of the sealer *Louis Olsen*, having in former years found seals in greatest numbers to the westward of the Pribilofs, cruised persistently in that portion of Bering Sea during the past season, taking only 84 seals.

Many other sealers confidently expecting to find the bulk of the seal herd to the westward of the Pribilofs cruised there at the opening of the past season without success, but later made good catches to the southeastward.

While engaged in pelagic sealing investigations with the United States revenue cutter *Corwin* in 1892 fur seals were plentiful to the westward of the Pribilofs, the cutter *Rush*, cruising to the east at the same time, meeting with very few.

NOTES ON THE FOOD OF SEALS.

Captain Todd says the food of seals taken near the mainland consists largely of salmon, and that this is true of the Japan and Copper Island sealing grounds as well as of the North American coast.

Captain Magnesen, of the sealer *Walter Earle*, reports the seals taken on August 25, 1894 (latitude 56° 13′, longitude 172° 44′), as feeding on salmon.

Capt. S. Balcom, of the sealer *Walter Rich*, reported taking salmon occasionally from the stomachs of seals speared in Bering Sea in August, 1894.

Capt. H. F. Siewerd, of the sealer *Mascot*, in 1894, collected the stomachs of three seals, containing pollock apparently, at the following position: Latitude north 56° 10′, longitude west 171° 45′; August 28, latitude north 58° 01′, longitude west 173° 29′; latitude north 58° 02′, longitude west 172° 45′, September 8.

Captain Siewerd writes that other seals opened at the first position contained nothing but squid, and at the second position cod and squid; but it is possible that the fish observed were pollock, which closely resemble cod.

Contents of the stomachs of 33 fur seals[1] taken during the month of August, 1894, at distances varying from 100 to 140 miles west and northwest of the Pribilof Islands, along the border of the plateau, collected by A. B. Alexander, with the schooner *Louis Olsen*, show the following:

Date.	Latitude north.		Longitude west.		Sex.		Contents of stomach.
					M.	F.	
	°	′	°	′			
Aug. 4	57	50	173	48	....	4	Fish, much digested, apparently pollock.
6	58	30	173	56	3	3	Do.
6	58	30	173	56	1	....	Pollock or cod, with one-half dozen squid; beaks small.
7	58	30	173	56	1	18	Fish, much digested, apparently pollock.
7	58	30	173	56	1	....	Full peck of red-fleshed fish resembling salmon; bones not determined.
10	58	27	172	46	....	1	Fish, digested, probably pollock.
11	57	42	172	52	....	....	Pollock.

[1] Fifteen stomachs containing fish bones were saved for further examination, others thrown away.

INDIAN HUNTER OF SEALING CANOE. SHOWING DOUBLE-POINTED SPEAR POLE; DETACHING SPEAR POINTS WITH LINE 30 YARDS LONG; PADDLE; KILLING CLUB, AND WOODEN CANOE BAILER. SCHOONER FAVORITE.

Mr. Alexander reports the seals taken by the *Olsen* to have been feeding on pollock, whenever identification was made with certainty. Several seals were speared in the act of eating pollock, the fresh remnants making identification certain. During the cruise large cod were taken at sealing stations in depths of 60 and 70 fathoms, and were so abundant that the decks could have been filled with them, although the stomachs of the seals taken contained pollock. The stomachs of the cod contained starfish, prawns, squid, jelly-fish, and a few small fishes; nothing of the kind being found in the stomachs of seals taken at the same positions. Some of the cod weighed 30 pounds, the average being 9 pounds, while an examination of the fish eaten by the seals shows the fish to have been of the size of pollock or smaller.

It would appear that the seals taken by the *Olsen* were feeding near the surface.

PROBABLE USE OF FIREARMS IN SEALING DURING SEASON OF 1894.

In regard to the surreptitious use of firearms in Bering Sea, I have to state that conspicuous blood stains were noticed on several rookeries between September 9 and 12, 1894, both by the Treasury agents and myself, and indicated the presence of wounded animals. In a few cases dead seals were found. The blood as noticed in a dozen or more of places was spattered upon the rocks from the beach well back into the rookeries, leaving distinct bloody trails, with occasional bowlders well stained where the animals had paused. The stains were fresh, although being rapidly effaced by moving seals and wet weather.

DEAD SEALS FOUND (ALL ADULTS).

North rookery, 1 female; Starry Arteel, 1 female; Garbotch, 1 male and 5 females; Tolstoi, 3 females; Zapadnie, 1 male and 2 females; total, 14.

The carcasses on Zapadnie were comparatively fresh, the others had been dead probably three weeks. From the fact of these carcasses being in the rookeries and rubbed and fouled by seals constantly crawling over them, I could not determine the presence of gunshot marks. I have left out of the above count three rotten carcasses found on Garbotch, that apparently died early in the season.

Mr. A. B. Alexander reports that while cruising with the *Louis Olsen* firing was heard from the vessel on August 10 during foggy weather, and that the hunters reported hearing guns constantly while out in the boats the same day. The crew are of the opinion that the firearms were being used for sealing, although nothing was seen.

The hunters of the *Favorite* reported in Unalaska on August 27 that they heard firearms in Bering Sea on several occasions. When I boarded the *Walter Rich* in Bering Sea September 6, the captain reported having speared a seal on the 5th freshly wounded with buckshot.

Reports of a similar character came to our ears at times during the season. The patrol fleet found it impracticable to search vessels at sea—nothing more than a cursory examination being possible under the circumstances. If guns are to be prohibited, sealing vessels should be searched at the Unalaska wharf, or some other favorable place where there is a possibility of overhauling their cargoes in an effective manner.

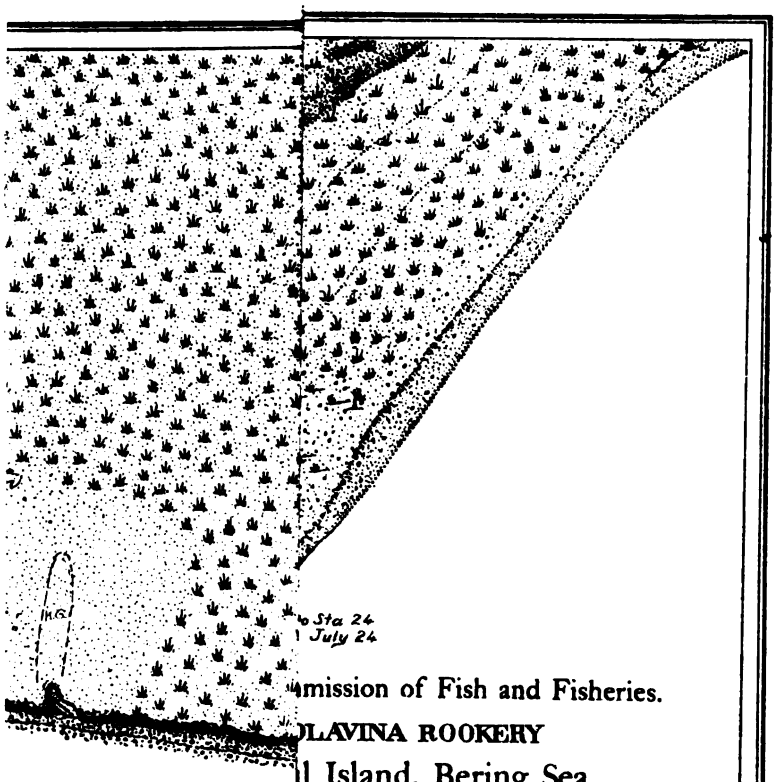
Fur-seal catch of American vessels for 1894.

[Prepared by A. B. Alexander.]

Vessel.	Northwest coast.	Japan coast.	Copper Islands.	Bering Sea.	Total.
Alton		1,185			1,185
Alexander		810			810
Anaconda		397			397
Anna Matilda		785			785
Allie I. Algar		1,395		327	1,722
Bonanza		1,724			1,724
Bowhead		1,407			1,407
C. G. White		936			936
Emma and Louisa		1,166			1,166
Emma	66				66
Eppinger		1,080			1,080
Edward E. Webster		1,650			1,650
Ella Johnson				1,214	1,214
Ethel	5				5
Geo. Peabody		231			231
Geo. R. White *a*	80				80
H. C. Wahlberg		326			326
Henry Dennis	6	855			861
Herman		968	324		1,292
Ida Etta	126			736	862
Jane Grey		1,155		138	1,293
Kate and Ann	15	672			687
Louis D	15	1,600			1,615
Louis Olsen		1,197		84	1,281
Lillie L		594	84		678
Josephine		150			150
Mary H. Thomas *b*					
Mascot *c*		535			535
Mattie T. Dyer		862	290		1,152
Mathew Turner *d*		857			857
Penelope		656			656
Prescott		325	102		427
Retriever		837	661		1,498
Rattler		1,046	109		1,155
Rosie Sparks		420		197	617
St. Paul	36				36
Sophia Sutherland		1,788			1,788
San Diego *d*		600			600
Stella Erland				761	761
Teresa		686		318	1,004
Volunteer	100				100
Willard Ainsworth		893	201		1,094
Winchester		1,606			1,606
Amature *e*	225				225
Columbia *e*	564			403	967
C. C. Perkins *e*	45				45
Decahks *e*	400			1,023	1,423
Dart *e*	29				29
Felitz *e*	160				160
James G. Swan *e*	600				600
Puritan *e*	180				180
Total	2,652	31,376	1,771	5,201	41,000

a This vessel not yet returned.
b Lost; number of skins not known.
c Lost; 535 skins taken; none saved.
d Lost; skins not saved.
e Indians from Neah Bay.

1



o Sta 24
July 24

mission of Fish and Fisheries.

LAVINA ROOKERY

l Island, Bering Sea.

ea occupied by Fur Seals in 1895,
as determined by

H. Townsend, *Assistant.*

Scale: 528 ft.-1 inch.

0 1 2 3 *inches*

interval approximately 10 ft.

r bed area - mixed vegetation.

sturbed from time to time by seals hauling,
r uniform grass.

Breeding Grounds.

Hauling "

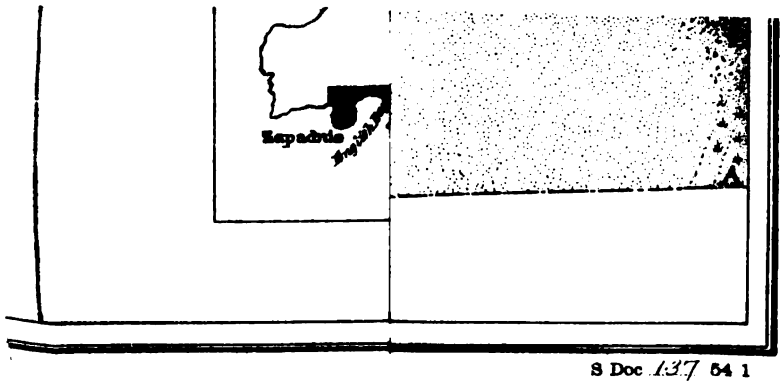
e of examination July 24

3

4

S Doc. 137 54 1

5



6

S Doc 137 54 1

I spent the 25th and the forenoon of the 26th in going over the rookeries of Lukannon, Ketavie, Reef, Lagoon, and Tolstoi. Female seals were scarce, none being observed on any of the rookeries at a distance of more than 50 or 60 feet from high-water mark, although the usual rookery area was occupied by bulls. The harems in course of formation along the beaches were as yet very small, the average number of females to each being five. About one-fourth of the females were nursing new-born pups, the others being conspicuously gravid. Some sections of rookery ground were still covered with snow and a number of new-born young with the red placentæ still attached were lying upon the snow. Occasional females were noticed arriving from the sea, but none were seen leaving. There were no signs of any then coming into heat. A hasty count by harems of females and young at two favorable points resulted as follows:

Lukannon.—10 females, 5 pups; 2 females, 1 pup; 15 females, 2 pups; 4 females, 1 pup; 9 females, 4 pups; 9 females, 3 pups.

Ketavie.—14 females, 6 pups; 6 females, 1 pup; 8 females, 2 pups; 7 females, 4 pups; 10 females, 3 pups; 10 females, 2 pups; 8 females, 3 pups; 5 females, 1 pup.

The hauling grounds were fairly well occupied. A drive was made from Reef rookery on the morning of the 25th, about 1,200 being killed. At 1 p. m. the rejected seals had in large part returned to Zoltoi Neck, from which they had been driven, and were hauled out nearly all the way across. A drive of about 1,000 seals from Polavina rookery was made on the 26th, from which about 700 were killed.

COMMANDER ISLANDS.

The *Albatross* sailed at noon on June 26 for Bering Island, Siberia, where we arrived on July 3. Dr. Leonhard Stejneger, curator in the United States National Museum, was landed for the season, in order to study the condition of the seal rookeries and the habits of the Commander Island seals, respecting which he made an important series of observations during the years 1882 and 1883. The 4th was spent in visiting North rookery, 12 miles distant from Nikolski village, the trip being made on dog sleds furnished by Governor Grebnitzky. Although the weather was not clear, I succeeded in making highly satisfactory panoramas of the rookery, which lies in two sections, separated by a space of about three-fourths of a mile. The rookery is located at Yushin Point at the extreme northern end of the island. The larger section of the rookery occupies a flat, reef-like peninsula, the smaller being on the beach to the southwestward. Very few bachelors were present, and these were scattered so close to the breeding seals that distinct hauling grounds were not apparent. The breeding seals were very densely packed upon their respective areas, a large portion of the females having brought forth their young. The latter were beginning to collect into groups by themselves, and the females were rapidly coming in heat.

North rookery, the most important of the four rookeries on the Commander Islands, I estimated to be of about the same size and importance as Tolstoi rookery on the Pribilof Islands. With but one other rookery approaching it in size, it is evident that the seal fishery of the Commander Islands is of very moderate value as compared with that of the Pribilof Islands, while it is certain that there is at present no such supply of seals as would be necessary for the maintenance of the large fleet of vessels now operating upon this herd during its migrations between Bering Sea and the coast of Japan.

The positions where seals were taken by pelagic sealers during the season of 1895 in the waters adjacent to the Commander Islands were for the most part to the eastward, southward, and westward of the islands, within a radius of 100 miles, the catch of one vessel having been made off Cape Nagikinsky, 200 miles to the northwest. The data are derived from the log books of 5 American vessels whose catches aggregate 714 seals, taken between July 5 and September 4. In the year 1892 the schooner *Henry Dennis* made a catch of 563 seals between July 2 and August 28 in these waters, all seals being taken within 170 miles of the islands. The sex of seals taken is not stated. The total number of seals obtained by the combined Canadian and American fleets off the Russian coast during the season was 7,648, the positions where seals were taken by Canadian vessels not being at hand.

During the season of 1895 a sealing fleet numbering 45 vessels took 38,732 seals belonging to the Commander Islands herd, along the coasts of Japan and Russia. To this number should be added the catch made by a small fleet of a dozen or more vessels belonging to Japan, of which we have received no record. The Japan and Russian catch for the season is considered small, and would have been unprofitable but for a shortage in the total pelagic catch and a consequent advance in the price of seal skins.

PRIBILOF ISLANDS.

The *Albatross* returned to St. Paul Island on July 9, when I took up my quarters on shore for the season.

Resuming the observations left off in June, the rookeries of Lukannon, Ketavie, Lagoon, Tolstoi, and a portion of Reef rookery were examined very minutely and the breeding females occupying them carefully counted. This work, with brief visits to all the other rookeries, occupied the time until the 16th, when Ketavie and Lukannon rookeries were visited for chart data. On the 17th we went to St. George Island, where all the rookeries were photographed and their areas platted on the charts during the 18th and 19th. Returning to St. Paul Island on the 20th, the chart and photographic work was taken up and pushed rapidly to completion, the charts being finished on the 24th and the photographic series on the 27th.

From this date until August 9 I was engaged in making natural history observations on the rookeries, and in setting up artificial landmarks to outline the present limits of the rookeries and serve as guides for their delineation in future.

The latter work consisted in painting on suitable bowlders, in white lead, large crosses (+) that would be conspicuous from the photographic stations, and would appear in the panoramas that might be made hereafter. These crosses, placed on Northeast Point, Polavina, Reef, Tolstoi, and Upper Zapadnie rookeries, on St. Paul Island, and on Zapadnie rookery on St. George Island, were located with reference to the limits of the breeding grounds or the points where seals were massed.

On Northeast Point rookery four crosses, visible from Station 5, mark the rear limits of the principal masses of seals.

On Polavina rookery four crosses mark the limits—two on each side of Station G.

On Reef rookery five crosses from stations 17 to 18, mark limits or masses.

On Tolstoi rookery five crosses mark limits.

On Upper *Zapadnie rookery* six crosses mark limits or masses.

On Zapadnie (St. George Island) a cross marks the extreme western end of the rookery.

It seems advisable to have these artificial landmarks extended to some of the other rookeries and located on their respective charts.

Photographic Station G, on Polavina, was marked F by mistake and should be corrected.

Photographic Station 5, on Northeast Point, was appropriately marked.

CONDITION OF ROOKERIES IN 1895 AS SHOWN BY CHARTS AND PHOTOGRAPHS.

The changes that have taken place in the rookeries since July, 1894, are so marked that their depleted condition in July, 1895, is in general apparent upon comparison of the charts and photographs covering the two seasons. The usual number of seals not having appeared at the customary time of commencing the photographic work, the latter was purposely delayed in order that the ground might have ample time to fill up, the dates at which the photographs were made being mostly a week later than in 1894. Even after the slight spreading of the breeding seals that takes place as the season advances, the grounds were not at any time during 1895 occupied by their usual numbers of seals. Rookeries, or breeding grounds, strictly speaking, are the tracts within the limits of which young seals are brought forth, being perfectly distinct areas as contrasted with those over which they spread of their own accord somewhat later. The "spreading" which results from the swelling of the rookeries by the birth of thousands of young was scarcely perceptible during the season of 1895, the limited number of adults on the rookeries making it unnecessary for the animals to scatter to the usual distances from the beaches. Many old breeding males occupied their former positions in the rear of the rookeries, but remained alone, or with but two or three females during the season, their harems having been absorbed by harems nearer the beach and not permitted to pass back. Many of the branches of rookeries formerly extending well back of the breeding grounds at favorable points where the seals lie in masses have this year been absorbed into the main body of breeding seals. These changes are shown in the photographs of some of the rookeries and are represented on the charts. In many narrow rookeries stretched along beaches where the number of seals is not great, changes caused by a decrease in seal life are not of such a character as to be apparent in photographs until actual breaks occur. All such rookeries confined to narrow beach slopes are now thinned out to the verge of breaking apart in many places. They no longer overlap on to the level ground usually found above the slopes, and the surplus of male seals derived from their adjacent hauling grounds is no longer of any importance. Breaks which occur in rookeries are always carefully noted, as they are sure indications of decrease in the seal life of rookeries heretofore continuous. Certain thin sections as observed in 1894 indicated breaks likely to follow further decrease in seal life. As a result of the heavy loss of female and young seals caused by pelagic sealing in Bering Sea in 1894, many of the predicted breaks actually occurred in 1895. The destruction of a much larger number of females and young, through the operations of the sealing fleet in Bering Sea in 1895, will cause a reduction in the class of breeding seals next season, amounting practically to the loss of continuity in all the thin rookeries on the islands and rendering the business of pelagic sealing unprofitable.

The thinning out of the breeding seals and the consequent recedence of the breeding limits toward the beaches is followed by the encroachment of grass upon the bare ground but recently occupied by seals. Attention is called to a series of photographs taken annually which are illustrative of this feature.

It is impossible to represent satisfactorily the decrease of the rookeries by photographs or charts. The former are limited in number and have frequently to be taken from unfavorable points, while the reduction of a great tract more or less occupied by seals to the limits of a small photograph is often misleading except to those familiar with the ground. The case of the charts is similar, the changes in extensive areas of land not being impressive when indicated upon charts of small scale. Special attention is called, however, to the large panoramas taken from Stations 5, 17, and G, showing the large rookeries of Northeast Point, Polavina, and Reef. In all of these very comprehensive views the decrease in the number of seals and the withdrawal of the breeding limits toward the sea front is apparent.

ST. PAUL ISLAND.

Northeast Point rookery.—The thin patches of seals upon each side of Sea Lion Point are reduced in numbers and area. From station 6 to the point two important breaks occur at points opposite the marshes. From the point to Station 5 the rookery has visibly narrowed and the seals have decreased in numbers. From Hutchinson Hill one of the most important changes of the year is visible. The photograph from Station 5 shows the wide rookery ground to be narrower than ever before. At only one point were young seals born as far back as the base of the hill. At Station 4 the change is amply shown by the photograph, which, although taken eleven days later than in 1894, shows no indication of seals spreading to their former limits. South of Station 4 the seals for the first time failed to cover an important tract extending back in the direction of Hutchinson Hill. This is shown in the photograph from Station 3. The animals usually somewhat massed at this point have found room upon the immediate beach slope. From Station 3 to Station 1 the breeding seals are confined to the narrow beach slope, very difficult of examination. Here the rookery is exceedingly thin, which is indicated to a slight degree in rather unsatisfactory photographs. The decrease in the number of seals at this great rookery since 1894 is very marked.

Polavina rookery.—The main rookery, situated on a comparatively level tract, is shrunken perhaps 50 per cent in dimensions, and at no point extends back to the limits of 1894. The small communities occupying the ledges under the cliffs north of the point were much reduced in numbers, and with the exception of a few stragglers did not overlap on the plateau above. The photograph of the main rookery, taken at short range, shows the breeding line to have receded toward the beach, while the level ground at the left remained unoccupied. Another view from Station 21, at still shorter range, shows a loss of seals from the foreground and extreme background.

At Little Polavina rookery the branches of the rookery extending back on the plateau have been absorbed, while the remnant along the cliff is thinned and lies in patches. Foggy weather prevented satisfactory photographic work.

Lukannon rookery.—The breeding line here was drawn somewhat lower than usual, and at no time during the season were the seals

hauled back to the customary limits. For the first time during my observations of this ground no young were born on the hill above Station 12. Photograph 26 is useless for comparison, the breeding seals being altogether in the dim background to the left. The eastern two-thirds of Lukannon rookery was counted on July 12; it contained 1,840 females.

Ketavie rookery.—Now thinner than ever before. It is broken apart in many places. All the young born this season were on the lower ledges, and there was no seasonal spreading back whatever. The ground is easily commanded, and a careful count was made. There were only 2,070 females between Station 12 and Ketavie Point. Photograph 13 shows a reduced tract, with bulls in the rear that were unable to form harems in 1895. The other photographs of Ketavie show a decrease.

Reef rookery.—A comparison of the charts and photographs of this ground for the seasons of 1894 and 1895 will show in a measure the change for the worse that has taken place. Photograph 16 shows the recedence of seals on the hill slope toward the water's edge. Photograph 17 shows a recedence toward the sea and a very distinct decrease. The great extent of this panorama is more graphically indicated on the chart (east of Station 17). No. 18 shows the recedence of the seal belt resulting from diminished numbers and the consequent isolation of old bulls on breeding ground no longer reached by females. No. 19 shows a recedence from the higher ground. No. 20 shows a reduction and a recedence toward the water. The photograph of the grass area on this rookery is especially interesting as proving the rapidity with which grass takes possession of ground which a few years back was teeming with seals. This area, devoid of grass in July, 1892, was selected and marked at that time for annual observation. Being now well grass-grown, as the photograph proves, it is valuable as showing the rapidity with which grass grows on ground recently vacated by seals, a fact denied at some length by the British Bering Sea commissioners (see British Counter Case, Fur Seal Arbitration, Ex. Doc. 177, part 8, p. 504). Not only has the area marked by cairns become grass-grown, but the entire tract between the rookeries is now a continuous meadow covered with weeds and flowers.

Lagoon rookery.—Here there has been a perceptible shrinkage at the ends. The photograph shows how the west end is breaking apart into small harems. This long and thin rookery may be expected to illustrate next season the damage that will surely result from the past season's loss of females and young. When counted on July 11, the whole area contained 1,268 female seals.

Tolstoi rookery.—This rookery has diminished very perceptibly. Photograph F shows that the seals no longer ascend the hill and surround the large bowlder on the extreme left, while photograph 11 shows a thinning out in the foreground and a recedence from the left end. Allowance should be made for a change in the shape of the bay itself, a hundred feet or more of sand having filled in the bight at the left end of the rookery. A pencil line on photograph 11 shows the true bearing of the camera. The number of female seals along the narrow beach from the dotted line toward the point at the right (see photograph 11) was 1,520 on July 11, 1895.

Lower Zapadnie.—Photograph 7 is too dim for comparison. Photograph 7[a], although made at long range, indicates a decrease. In photograph 8[a], the camera having been wrongly placed, comparison with the preceding year is unfavorable, but diminished numbers are indicated. Lower Zapadnie is greatly reduced since 1894.

Upper Zapadnie.—The view from Station 8 is too distant for satisfactory comparison, but reduced numbers are apparent. In photographs 9 and 10 it will be noticed that some old bulls in the rear of the rookeries were unable to form harems, and in photograph 10 the continuity of the patch of seals near the sea is broken. In general there has been a shrinkage in territory and a marked reduction in numbers.

ST. GEORGE ISLAND.

North rookery.—Photograph 2 illustrates, on a small scale, the absorption of the small harems in the rear into the main body of the rookery nearer the sea—the result of lessened numbers. This ground, when counted July 18, contained 110 females.

Little East rookery.—There is here a decrease and a shrinkage in area, indicated to some extent in the photograph.

East rookery.—A very perceptible reduction in numbers.

Starry Arteel rookery.—A great reduction in numbers, with consequent abandonment of the high ground in the rear.

Zapadnie rookery.—The change here is shown on the chart. The rookery has diminished in numbers and extent. The present condition of the rookery is well shown by a new photograph from Station H.

List of the charts showing the outlines of the rookeries on the Pribilof Islands, July, 1895.

ST. PAUL ISLAND.

Northeast Point rookery	July 24, Chart A
Polavina rookery	July 24, Chart B
Ketavie and Lukannon rookeries	July 16, Chart C
Reef and Garbotch rookeries	July 21, Chart D
Tolstoi and Lagoon rookeries	July 23, Chart E
Zapadnie and English Bay rookeries	July 20, Charts F and G

ST. GEORGE ISLAND.

Starry Arteel rookery	July 19, Chart H
North rookery	July 18, Chart I
East and Little East rookeries	July 18, Chart J
Zapadnie rookery	July 19, Chart K

List of the photographs of the seal rookeries on the Pribilof Islands taken in July, 1895, by N. B. Miller and C. H. Townsend, showing the dates on which they were made.

ST. GEORGE ISLAND.

Starry Arteel rookery	July 18 (N. B. M.)
North rookery	July 18 (N. B. M.)
Little East rookery	July 18 (N. B. M.)
East rookery	July 18 (N. B. M.)
Zapadnie rookery	July 19 (C. H. T.)

ST. PAUL ISLAND.

Northeast Point rookery	July 24 (C. H. T.)
Little Polavina rookery	July 24 (C. H. T.)
Polavina rookery	July 26 (N. B. M.)
Lukannon rookery	July 20 (N. B. M.)
Ketavie rookery	July 20 (N. B. M.)
Reef rookery	July 20 (N. B. M.)
Lagoon rookery	July 27 (C. H. T.)
Tolstoi rookery	July 24 (N. B. M.)
Lower Zapadnie rookery	July 20 (C. H. T.)
Zapadnie rookery	July 20 (C. H. T.)

coalescing having begun, and they were therefore counted sep
This work was continued with Lagoon rookery and portions of
Lukannon, and Reef rookeries, where female seals were counte
lows: Ketavie, 2,218; Lukannon, 1,940; Lagoon, 1,216; Tolsto
Reef, 566. The whole number counted was 7,479.

Narrow places limited to the beach slope, like Lagoon rooke
not difficult to count from a boat when the sea was smooth, w
trouble was encountered in doing the same with thin rookeri
could be viewed from low cliffs. The value of the data secured
be overestimated, it being the first time that rookeries were fo
ficiently reduced in the number of breeding females to admit
numbers being determined with any degree of precision. A
these rookeries may not have quite reached their breeding heig
were so near to it that the corrections to be applied are unim
With a very fair set of figures for the extensive area thus exami
are able to form a more accurate estimate of the number of b
females on the Pribilof Islands than ever before. Adopting t
of the rookery charts prepared by Mr. J. Stanley-Brown (264 f
inch) we find the 7,479 seals counted to be distributed over 7.0
making 1,061 seals to the acre. The remaining area occupied l
has been computed at 54.47 acres, as based upon the rookery
delineated on the charts for 1895. The result is a total of 65,23
ing females for all the rookeries of the two islands. Some cor
might be applied for certain tracts on Reef, Tolstoi, and Northea
rookeries, where the seals always lie more or less massed, but I
admit that there were between July 10 and 15 more than 75,00
ing females present upon the islands. There is also a correcti
applied for a moderate number of females not on the rookerie
time the breeding females were being counted. As the seas
backward, and the females later than usual in arriving, their app
was made en masse, so it is altogether probable that the nu
absentees was not important.

From the 10th to the 15th of July the rookeries were fill
females that had just brought forth their young. They had no
ably begun going to sea to feed, and at no other time were s
coming in heat. It is altogether unlikely that any very im
number of females could have been away from the rookeries a
when the females were still in excess of young. Mr. True fo
percentage of young to be 62 on July 9, while on July 20 the
were everywhere in excess of females. Later in the season 50 p
at least, of the females were customarily absent from the rooke

ensus of Ketavie rookery, by harems, from North End to Ketavie Point, on July 9 and 10.

[The numbers indicate breeding females in each harem.]

14	34	75	42	1	1	10	37	14	3
7	1	1	3	14	8	32	22	2	18
15	12	1	4	88	13	14	24	27	10
60	5	5	9	31	12	12	22	11	13
40	13	6	26	23	35	17	15	25	21
10	16	11	34	5	1	21	3	27	10
8	52	1	2	27	10	13	2	22	5
8	1	18	15	43	29	13	10	18	55
23	5	50	9	1	1	4	16	34	1
24	47	21	21	29	3	9	10	3	1
28	13	17	12	145	15	13	2	10	2
43	13	23	20	64	8	16	6	23	

Whole number of breeding females..... 2,218
Whole number of harems..... 119
Average females to harem..... 18—

Census of Lagoon rookery, by harems, on July 10.

[The numbers indicate breeding females in each harem.]

8	32	18	2	19	4	5	31	19	16
9	20	31	24	1	15	2	20	1	20
38	16	8	26	23	35	16	6	3	12
12	16	4	28	4	23	6	7	67	1
4	41	37	7	67	14	9	14	20	2
16	21	4	42	48	4	26	1	25	4
1	4	1	7	39	3	10	4	18	15
1	8	1	3	24	16	22	10	25	41

Whole number of breeding females..... 1,216
Whole number of harems..... 80
Average females to harem..... 15+

Census of Tolstoi rookery, by harems, from the Point to end of Grass Bluff, on July 11.

[The numbers indicate breeding females in each harem.]

7	9	12	7	8	15	4	14	3	10
8	16	20	12	24	13	10	12	1	1
1	4	16	16	15	31	18	17	15	1
1	10	9	6	1	13	20	15	10	34
8	19	15	1	11	18	26	4	20	1
29	3	14	3	2	25	16	3	26	28
2	9	24	27	1	11	45	8	7	1
45	4	20	42	6	1	21	5	2	29
1	6	11	1	1	9	1	22	51	17
15	3	32	3	37	25	6	23	15	5
18	5	47	24	11	18	10	31	13	31
1	4	1							

Whole number of breeding females..... 1,539
Whole number of harems..... 113
Average females to harem..... 13+

Census of Lukannon rookery, by harems, from bluff to ledge of flat rocks, on July 12.

[The numbers indicate breeding females in each harem.]

26	35	13	12	3	10	9	5	39	18
27	1	5	51	5	16	9	55	1	9
14	27	31	6	26	9	21	3	48	35
44	46	14	16	34	1	2	54	17	40
1	19	2	68	25	10	17	40	8	11
32	6	21	45	7	10	1	68	30	24
45	70	22	53	7	18	21	16	12	3
38	62	28	3	21	9	5	2	3	35
5	2	36	13	13	11	19	12	74	

Whole number of breeding females..... 1,940
Whole number of harems..... 89
Average females to harem..... 21+

Census, by harems, of a portion of Reef rookery, below bluff north of Station 19, on July

[The numbers indicate breeding females in each harem.]

12	14	2	31	7	13	9	74	14	5	20
9	10	4	16	25	11	16	16	1	21	14
4	9	4	37	8	14	90	9	55	1	1

Whole number of breeding females	566
Whole number of harems	33
Average females to harem	17
Whole number of breeding females counted on Ketavie, Lukannon, Tolstoi, Lagoon, and Reef rookeries	7,479
Whole number of harems	434
Average females to harem	17+

RESTORATION OF THE ROOKERIES.

With the number of breeding females in the Pribilof seal herd diminished to about 75,000 in July, 1895, and this number further reduced by the pelagic loss of August and September (certainly not less than 30,000 females out of the catch of nearly 44,000), we have remaining a very limited breeding stock, and yet, notwithstanding this circumstance, if absolute protection can be guaranteed to the seals without delay and for a term of years, the stock is still large enough to insure a comparatively rapid restoration of the rookeries. If there be no further loss of females during the present winter by sealing on the Northwest Coast, we may fully expect to find the rookeries in 1896 occupied by the present number of breeding females, about 45,000, together with several thousand 3-year-old females that will then become breeders. It is exceedingly difficult to calculate the increase of 3-year-old breeding females for that time, there being no record of the proportion of 2 and 3 year old females lost during the pelagic sealing of the past two seasons. It is evident that the loss of over 50,000 pups in 1894–95 will result in a poor showing of breeding females in 1897–98. Supposing, however, that the existing breeding females, with their female progeny, were secured against destruction in future, the restoration of the rookeries would be certain, and the rate of increase more rapid from year to year.

The following table showing the increase in seal life that would naturally result from the complete protection of females is based upon the natural-history facts that they breed annually from the third year and produce both sexes in equal numbers. The loss from natural causes, such as old age, injuries received on the rookeries, killer whales, etc., is probably unimportant.

Assuming a breeding class of 50,000 seals in 1896, there is shown an increase to nearly half a million in ten years, while at the end of twenty years the breeding females alone number over 6,500,000. The annual increase of young males would be equal to the annual increase of young females, or to half the breeding females. A very small proportion of these being required for breeding purposes, this class would practically be available annually as a surplus. Not only do seals breed early in life, and with great regularity, but they return to their breeding grounds with a faithfulness which demonstrates the security they feel there. The seal rookeries of the Pribilof Islands can, therefore, unquestionably be restored, and at a known ratio of increase. These figures may appear startling, but they are founded on simple natural-history facts.

EAR	INCREA. YOUNG FEMA	
896	b	25,0
897	c	25,0
898	d	25,0
899	e	37,5
900	f	50,0
901	g	62,5
902	h	81,2
903	i	106,2
904	j	137,5
905	k	178,1
906	l	231,2

X	

X_1

1.

Table showing the increase in seal life that would naturally result from the complete protection of the females.

Year.	Breeding females.	Annual increase of young females.	Annual increase of breeding females.	Total breeding females.
1896	50,000	25,000	(a)	.....
1897	50,000	25,000	(a)	.....
1898	50,000	25,000	(a)	.....
1899	50,000	37,500	25,000	75,000
1900	75,000	50,000	25,000	100,000
1901	100,000	62,500	25,000	125,000
1902	125,000	81,250	37,500	162,500
1903	162,500	106,250	50,000	212,500
1904	212,500	137,500	62,500	275,000
1905	275,000	178,125	81,250	356,250
1906	356,250	231,250	106,250	462,500
1907	462,500	300,000	137,500	600,000
1908	600,000	389,062	178,000	778,125
1909	778,125	504,687	231,250	1,009,375
1910	1,009,375	654,687	300,000	1,309,375
1911	1,309,375	844,718	389,062	1,689,437
1912	1,689,437	1,097,062	504,687	2,194,124
1913	2,194,124	1,424,405	654,887	2,848,811
1914	2,848,811	1,846,764	844,718	3,693,529
1915	3,693,529	2,395,295	1,097,062	4,790,591
1916	4,790,591	2,818,677	1,846,764	6,637,355

a Available as breeders at third year.

LOSS OF YOUNG SEALS BY STARVATION.

The steamer *Albatross* having left Bering Sea in 1895 somewhat earlier than usual, I did not visit the rookeries on the Pribilof Islands in September to repeat the observations made by me at the same season in 1894, respecting the loss of young seals resulting from pelagic sealing. Arrangements were made, however, with the resident Treasury agents for a full and explicit report as to the extent of the damage that was certain to result from the presence of a large sealing fleet in Bering Sea during the breeding season. Such report, recently forwarded by Messrs. Adams and Judge, the resident agents of the Treasury Department in charge, gives the number of dead pups upon each rookery to October 10, the total loss of young seals for both islands up to that time amounting to 28,066. Many weak and emaciated pups were observed on all the rookeries, and these have doubtless since died. Pup seals are very fat and can not be killed by starvation in less than a month's time. Although many thousands of young seals were lost by starvation in September and October, 1894, on account of sealing done in August, I found no dead pups until after September 1. From that time on, the death of the young was continuous.

The following summation of the loss for 1895 is accompanied by affidavits as to the correctness of the counts made:

Loss of young seals on the Pribilof Islands by starvation resulting from the killing of female seals in Bering Sea in 1895.

[Count in full to October 10, 1895.]

ST. PAUL ISLAND.		ST. GEORGE ISLAND.	
Ketavie rookery	857	Zapadnie rookery	2,083
Lukannon rookery	1,347	North rookery	1,559
Lagoon rookery	300	Starry Arteel rookery	1,131
Polavina rookery	1,970	East rookery	986
Garbotch rookery	1,514	Little East rookery	253
Reef rookery	3,376		
Upper Zapadnie rookery	5,231	Total	6,012
Lower Zapadnie rookery	381		22,054
Tolstoi rookery	2,582		
Northeast Point rookery	4,017	Grand total	28,066
Sea Lion Rock rookery	361		
Total	22,054		

Twenty dead bulls and 101 dead females were found on St. Paul Island during the season of 1895, 3 of the latter having spear points and lines attached.

The total number of seals taken in Bering Sea during the season by the pelagic sealing fleet was 43,697. There can be no doubt that at least 75 per cent of those were breeding females, the death of which would necessarily involve the loss of over 32,000 young. The proportion of the sexes represented in the season's catch, as reported by the sealing fleet, is untrustworthy, judging from our experience with reports of this kind in the past and from what we know at present of the actual conditions.

RECOMMENDATIONS RESPECTING THE PRIBILOF ISLANDS.

Having already questioned the propriety of the driving and culling of seals by the lessees upon the islands, it is unnecessary to repeat the arguments against the practice. No further culling should be permitted. It would be preferable to kill a larger quota consisting of several grades of skins, taking all that might be driven, rather than to continue the selection of a single grade necessitating the excessive handling of the animals now practiced.

Should a sealing fleet be present in Bering Sea during the season of 1896, the removal of all surplus males, except yearlings and large bulls, would be desirable. While increasing the quota of Government skins and lowering the value of the pelagic catch, it would also have the effect of limiting the pelagic catch entirely to females. The number of females is now so limited that no profit will be found in taking them at sea, where they will be so scattered as to discourage pelagic sealers and to some extent shorten the season of their operations.

Another method, suggested by Mr. F. W. True, of reducing the pelagic catch to an appreciable degree might be found in retaining all non-breeding males upon the islands after August 1. Commencing about the 20th of July, all males appearing upon the hauling grounds, and rejected from the drives, could be placed in the larger inland lakes and held captive there for six weeks or more. A solution of the pelagic sealing question might be found in the branding of nursing females in such a manner as would destroy the value of skins, while the question of property recognition upon the high seas might be well worth raising.

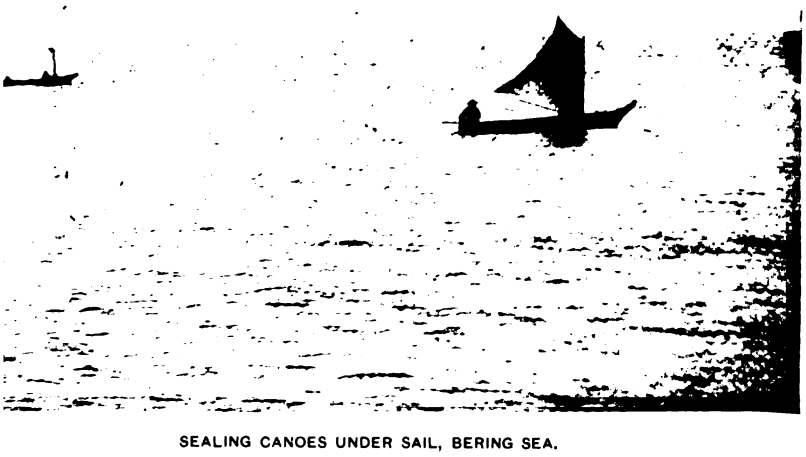
Any action on the part of the authorities directed toward the killing of female seals on the rookeries, for any purpose whatsoever, would be deplorable. Nothing can justify the destruction of the source of supply of anything useful to mankind.

REPORT ON PELAGIC SEALING IN 1895.

The following report embraces the results of observations made at sea between August 9 and 30, 1895, in connection with the fishery investigations of the Fish Commission steamer *Albatross*, and subsequently at Victoria, British Columbia, Seattle and Port Townsend, Wash., between September 25 and October 18. The work at sea consisted in boarding such vessels as were met with for the purpose of making inquiries as to the number of seals taken, the positions where taken, their sex, age, food, etc.

The perfecting of United States customs regulations providing for the collecting of sealing data by American vessels left comparatively *little* work to be done at sea. The examination of a considerable num-

CANADIAN SEALING SCHOONER E. B. MARVIN, BERING SEA.



SEALING CANOES UNDER SAIL, BERING SEA.

ber of carcasses of fur seals procured from sealing vessels during the month of August indicated that the species breed annually from the third year. It also yielded information on the sex of seals taken at sea and the character of their food, which appears to be pollock, squid, small fishes, and other surface life chiefly.

Upon the return of the *Albatross* to Puget Sound, I began boarding the vessels of the sealing fleet as fast as they returned. The catch for the year on the different sealing grounds was ascertained, and a number of log books kept during former sealing voyages and containing information on the seasonal migrations of the fur seal were collected.

During the months of August and September, 1895, there were engaged in sealing in Bering Sea 39 Canadian and 18 American vessels, the former making a catch of 35,773, and the latter a catch of 7,924 seals.

During the same period in 1894 a fleet of 38 vessels took 31,542 seals, while the total Bering Sea catch for 1895 (43,697 seals) required a fleet of 57 vessels, making a lower average per vessel, although a comparison of the log books of the American fleet for the two seasons shows the sealing weather to have averaged better in 1895, seals having been taken every day during the month of August.

The total number of Canadian and American vessels that engaged in pelagic sealing during the year was 96. The catch of seals from the Pribilof herd was 55,664, and that from the Russian herd 38,732, the total being 94,396. Less than one-third of the entire catch was made by American vessels, while the proportion of the American catch in Bering Sea is comparatively insignificant, the bulk of the American catch for the year having been made on the Japan coast.

The operations of the sealing fleet in Bering Sea in 1895 were in the same locality as in 1894, the catch as a whole having been made southeast, south, southwest, and west of the Pribilof Islands, outside the protected zone.

The sealing ground, platted upon a map prepared from positions obtained from a large number of sealing vessels, appears as a nearly semicircular belt about 60 miles in width, commencing to the northwestward of the Pribilofs and extending southward and eastward around the protected area, widening somewhat toward the southeastward limit, where seals were taken nearer the Aleutian Islands.

The condition of the American seal herd is now very critical. Should no changes be made during the present winter affecting the work of the great pelagic sealing fleet, the herd breeding on the Pribilof Islands will, by reason of sealing in Bering Sea during the coming season, be reduced to a comparatively insignificant size, so small, at least, as to ruin the seal fishery commercially at sea as well as upon land.

At a meeting of Canadian sealers recently held at Victoria it was decided that but one cruise be made during the year 1896, that to be in Bering Sea. The Northwest coast catch for the spring of 1895 proved unprofitable, but one vessel having made expenses, while the catch in Japanese and Russian waters was made barely remunerative by reason of an advance in the price of seal skins. This action on the part of the sealers is clearly the result of diminished catches. It is now evident to all persons interested in the pelagic sealing industry that further profit can not be expected from sealing in the North Pacific. That the sealing fleet as a whole after one more season's work in Bering Sea will be out of employment can not be doubted.

The condition of the seal herd breeding upon the Commander Islands is similar to that of the American herd. With the inauguration of the

restrictions of the modus vivendi, the destructive operations of the pelagic sealing fleet, so long directed chiefly against the American herd, were suddenly transferred to the Russian herd, and from that time its decimation has been rapid, the slaughter extending annually, from the latitude of Yokohama, in winter, to within 30 miles of the Commander Islands, in summer. The catch for 25 Canadian vessels in 1895 was 18,686 skins, as compared with a catch of 56,430 skins in 1894 by the same number of Canadian vessels. The total pelagic catch from the Russian herd for 1895 was only 38,732 as compared with a catch of about 82,000 in 1894.

A minute inspection of the rookeries on the Commander Islands during the past season revealed such a reduction in the breeding portion of the seal herd as to render immediate restrictions on pelagic sealing necessary, if anything more than a mere nucleus of the Russian herd is to be preserved.

PROPORTION OF SEXES IN THE PELAGIC CATCH.

This subject having been commented upon very fully in the report for 1894, further discussion as to the proportion of male and female seals killed by pelagic sealing seems unnecessary. Sealers detecting the danger of restrictions that might follow a discovery of the great preponderance of females in pelagic catches have in numerous cases misrepresented the facts. American inspectors of seal skins have found the reports made by masters of sealing vessels on this point to be subject to correction in cases too numerous to mention. There being no official inspection of the Canadian catch, the reports of masters are necessarily accepted for record. Canadians are the chief offenders, American sealers having in mind the customs inspections that accompany the landing of their catches. The American catch is reported (with custom-house corrections) to consist of three times as many females as males, no vessel reporting more males than females. The Canadian returns represent the numbers as more nearly equal, no official inspection of catches being made, although 11 vessels state their catches as chiefly male.

The following examples illustrate the differences usually found between the reports made by masters of vessels and those made by inspectors of seal skins:

Vessel.	Males.	Females.
Schooner Ecrett:		
Master's report	65	34
Official examination	9	90
Schooner Decahka:		
Master's report	39	43
Official examination	20	62
Schooner Bering Sea:		
Master's report	76	104
Official examination	35	145
Schooner Matilda:		
Master's report	13	22
Official examination	5	35
Schooner Erland:		
Master's report	83	82
Official examination	33	122

Discrepancies were found in nearly all the log books in the fleet. The skins were identified in the presence of the masters and others, who acquiesced in the identification as they were tallied. In all cases

of uncertainty the master's report was given the benefit of the doubt. As a result of the corrections made in the masters' reports of the spring catch for 1895, the records of the Bering Sea catch, made a few months later, were kept more carefully. There being still considerable misrepresentation, masters of vessels, when licensed for sealing, should be cautioned against making incorrect returns, for which the authorities should accept no excuse. The facts of the case are apparent. The skinning of seals in canoes by Indians makes the tally of the sexes of skins thrown on the decks of sealing vessels after nightfall uncertain, while the falsity of all statements of a majority of males is self-evident. It could be demonstrated in many ways. Take, for example, the well-known conditions existing on the Pribilof Islands; the breeding males do not leave the islands—in fact, do not enter the water—during the breeding season, while the surplus males resulting from the polygamous nature of the seal have always been in large part removed by annual killings upon the islands. Females must, therefore, necessarily constitute the great bulk of the pelagic catch. Out of a total of 123 seals examined at random by me upon the decks of sealing vessels in Bering Sea during the past season, 106 were females, or five-sixths of the whole number. The starvation of young seals upon the rookeries that follows the operations of the sealing fleet in Bering Sea is also evidence as to the sex of the seals killed. The loss of young seals up to October 10 is reported to be 28,066 by actual count, while many were then found in a dying condition.[1]

SEX, AGE, PREGNANCY, AND FOOD OF FUR SEALS TAKEN IN BERING SEA DURING AUGUST, 1895.

During the cruise of the steamer *Albatross* on the pelagic sealing grounds in August, 1895, many carcasses of fur seals, obtained from day to day from vessels engaged in sealing, were examined with reference to their age, sex, breeding condition, and food. Such carcasses were readily secured from schooners after the return of the hunting boats, while the evening work of skinning was going on, and all of those obtained were conveyed to the laboratory of the *Albatross* for dissection and examination. Of a total of 123 so examined in different localities from August 11 to 21, 106 were of female seals. Of the latter number 78 were nursing females, all determinations being based on examinations of mammary glands, uteri, and ovaries. Of the remaining females, 26 in number, 15 were yearlings and 11 were 2 years old. Of the males, 17 in number, 2 were yearlings, 4 were 2 years old, 8 were 3 years old, and 3 were 4 years old. Nearly five-sixths of the whole number being females, and nearly four-fifths of these being females in milk, the heavy drain made by pelagic sealing upon the producing class of seals is apparent.

Only one of the 15 yearling females bore signs of recent impregnation, and this one, taken for a yearling on account of its small size, may have been 2 years old. Four of the 2-year-old females were pregnant, one showing the corpus luteum in the right and the others in the left ovary. The breeding season not being over, the other 2-year-old females may have been impregnated later. A few nursing females not bearing marks of present pregnancy may have been impregnated and

[1] As this report goes to press I am officially informed that the sealing schooner *Penelope* on February 29, 1896, entered at San Francisco a catch of 215 seals, of which only 8 were males, all the rest—207—being females. The catch was made from January 24 to February 26, between the Farallone Islands and Point Conception, Cal., at distances averaging 25 miles off shore.—C. H. T., March 12, 1896.

Table showing the results of observations made on fur seals taken at sea in Bering Sea, August 11 to 21, 1895, respecting sex, age, pregnancy, and food—Continued.

SCHOONER TRIUMPH.

[Latitude, 55° 21′ north; longitude, 167° 49′ west. Date, August 20.]

Serial number.	Sex.	Age.	Uterus, horn showing former pregnancy.	Ovaries.		Stomach contents.
				Scar resulting from former pregnancy (corpus albicans).	Sign of recent impregnation (corpus luteum).	
16	Female	1 year				Small-fish bones.
17	do	Nursing	Left	Left	Right	Small-fish bones; squid.
18	do	2 years			Left	Salmon.
19	do	Nursing	Right	Right	do	Small fish.
20	do	do	do	do	do	Empty.
21	do	do	do	(?)	do	Do.
22	do	do	do	Right	do	Pollock (?).
23	Male	2 years				Empty.
24	do	4 years				Do.
25	Female	Nursing	Left	Lost	Right	Do.
26	do	do	do	Left	(?)	Squid; small fish.
27	do	do	do	(?)	Right	Do.
28	Male	2 years				Do.
29	Female	Nursing	Left	Left	Right	Small fish.
30	Male	1 year				Empty.
31	Female	Nursing	Left	Left	Right	Do.
32	do	do	Lost	Lost	Lost	Do.
33	do	do	do	do	do	Do.
34	do	do	Left	(?)	Both	Cod (?).
35	do	do	do	Left	Right	Salmon.
36	do	2 years			Left	Squid; small fish.
37	do	Nursing	Right	Right	do	Empty.
38	do	1 year				Do.
39	do	Nursing	Left	Left	Right	Do.
40	do	do	Right	Right	Left	Do.
41	do	do	Left	Left	Right	Salmon, cod.
42	do	do	Right	Right	Left	Squid; small fish.
43	do	do	Right (?)	(?)	do	Empty.
44	do	do	Right	Right	do	Blood.
45	do	2 years			do	Empty.
46	do	Nursing	Right	Right	do	Pollock.
47	do	do	do	do	do	Empty.
48	do	1 year				Squid.
49	do	2 years				Small squid, worms.
50	do	Nursing	Right	(?)	Left	Empty.
51	Male	3 years				Small fish; squid.
52	Female	Nursing	(?)	(?)	Right	Do.
53	do	do	Right	(?)	Left	Squid.
54	do	do	do	Right	do	Small fish.
55	Male	4 years				Squid, pollock.
56	Female	1 year				Empty.
57	do	Nursing	Left	Left	Right	Small fish, squid, worms.
58	do	do	do	do	do	Empty.
59	Male	4 years				Do.
60	Female	Nursing	Left	(?)	Right	Bones of pollock.
61	do	1 year				Empty.
62	Male	3 years				Do.
63	Female	Nursing	Right	Right	Left	Bones of fish.
64	do	do	Left	Left	Right	Blood.
65	do	do	Right	Right	(?)	Pollock bones.
66	do	1 year				Empty.
67	do	Nursing	Right	Right	Left	Squid.

***Table showing the results of observations made on fur seals taken at sea in Bering Sea, August 11 to 21, 1895, respecting sex, age, pregnancy, and food*—Continued.**

SCHOONER G. W. PRESCOTT.

[Latitude, 55° 33′ north; longitude, 168° 11′ west. Date, August 21.]

Serial number.	Sex.	Age.	Uterus, horn showing former pregnancy.	Ovaries.		Stomach contents.
				Scar resulting from former pregnancy (corpus albicans).	Sign of recent impregnation (corpus luteum).	
68	Female	Nursing	Left	Left	Right	Squid, small fish.
69	do	do	do	do	do	Empty.
70	do	do	do	do	do	Minute squid beaks, worms.
71	do	do	Right	(?)	Left	Small squid.
72	do	do	do	Right	do	Pollock or cod.
73	do	do	do	do	(?)	Empty.
74	do	do	do	(?)	Left	Squid, fish bones (pollock?).
75	do	do	Left	(?)	Right	Empty.
76	do	do	Right	Right	Left	Three cod.
77	do	do	do	do	(?)	Cod or pollock.
78	do	do	do	do	(?)	Cod.
79	do	do	do	do	(?)	Salmon.
80	do	do	do	do	(?)	Cod.
81	do	do	Left	Left	(?)	Two cod.

Seals examined	123	Female 2 years	11
Male	17	Male yearling	2
Female	106	Male 2 years	4
Female nursing	78	Male 3 years	8
Female yearling	15	Male 4 years	3

Nursing females 3 years of age or over.
Corpus albicans, the scar indicating ovary from which former pregnancy resulted.
Corpus luteum, the sign of pregnancy or recent ovulation from that ovary.
In these observations only the gross appearance of ovaries is considered; impregnation may have taken place in all the 2 and 3 year old females, and the corpus luteum not yet developed.

LIST OF PHOTOGRAPHS ILLUSTRATIVE OF PELAGIC SEALING.

[Photographs by N. B. Miller, C. H. Townsend, and A. B. Alexander.]

A portion of the sealing fleet at Sand Point, Alaska, in June, 1893.
Canadian sealing schooner *E. B. Marvin*. Bering Sea.
Canadian sealing schooner *Annie E. Paint*. Bering Sea.
Canadian sealing schooner *Dora Siewerd*. Bering Sea.
Canadian sealing schooner *Katherine*, formerly *Black Diamond*.
Canadian sealing schooner *Dora Siewerd* under storm canvas, showing manner of stowing canoes. 1895.
Deck of *Dora Siewerd*. 1895.
Skinning seals, *Dora Siewerd*. 1895.
Canadian sealing schooner seized in Bering Sea prior to 1888.
Canadian sealing schooner *Thornton* seized in Bering Sea prior to 1888.
Canadian sealing schooner *Ainoko* discharging skins at Victoria.
American sealing schooner *Columbia*.
Types of sealing schooners. Victoria Harbor. 1894.
Types of sealing schooners. Victoria Harbor. 1894.
A portion of the Canadian sealing fleet, Victoria Harbor. 1894.
Sealing boats stored at Victoria.
Portion of Indian crew of Canadian schooner *Favorite*. 1894.
Indian hunter of sealing canoe, showing double-pointed spear pole; detaching spear points, with line 30 yards long; paddle; killing club, and wooden boat bailer.
Indian sealing canoe, showing manner of throwing spear.
Indian sealing canoe under sail.
Indian sealing canoe with outfit and catch.
Sleeping seal—usual position, floating back down, with hind flippers turned forward over belly. August 7, 1894. Bering Sea.
Fur seal just awakened.
Starved seal pups, St. Paul Island. September, 1894.
Starved seal pups, St. Paul Island. September, 1894.

Pelagic catch of the American sealing fleet for 1895.

Vessel.	Hunters.		Bering Sea.			Japan coast.			Russian coast.			Northwest coast.		
	White.	Indian.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Ida Etta	24							564			484			
M. M. Morrill	5		102	291	393			591						
Allie I. Algar	7		20	173	193	723	381	1,004						
Deeahks		20	141	451	592							20	62	82
W. Ainsworth	5		117	323	440			1,180			61			
J. G. Swan		21	212	872	1,084							68	156	224
Stella Erland	8	16	203	473	676							33	132	165
G. W. Prescott	4	5	141	188	329									
Bering Sea	4	20	165	498	663							35	145	180
E. E. Webster	6		66	205	271			766						
Columbia	1	10	163	381	544							153	216	369
Louis Olsen					340			660						
Therese	7		96	330	426			389						
Emma Louisa	8		108	399	507			350						
Rattler	6		102	390	472	225	351	576						
J. Eppinger	7		113	339	452			785						
Herman	7		103	327	430			637						
Bonanza	10		93	196	289			926						
Alton	6		44	98	142			315						
Winchester	7							589			102			
Bowhead	6					263	421	684						
Jane Grey	5							1,112	43	139	185			
S. Sutherland	6					35	264	309						
Mattie Dyer	6							651	44	90	149			
Penelope	4					164	208	274			98			
Idler	8											6	35	41
Matilda	3	12										5	30	35
Elsie	8	11										84	125	209
Puritan		14										4	6	10
Emmett Felitz	1	17										9	40	49
C. C. Perkins		17										8	26	34
August		13										2	4	6
R. Ecrett	3	13										9	90	99
Teaser	3	20										27	60	87
Jessie	7												24	24
Kate and Ann														391
Total			1,989	5,935	7,924			12,362			1,079	463	1,151	2,005

Pelagic catch of the Canadian sailing fleet for 1895.

Vessel.	Hunters.		Bering Sea.			Japan coast.			Russian coast.			Northwest coast.		
	White.	Indians.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Mary Ellen		20	106	356	462			777			190			
Pioneer	24							845			790			
Wanderer		10	197	159	356									
Libbie		21	451	1,016	1,467							182	52	234
Agnes McDonald	8	14	593	669	1,202			711						
Maud S		32	750	642	1,392							185	102	287
Minnie		18	266	393	659									
Annie E. Paint	26		191	575	766			1,121			135			
Sadie Turpel	19							798			470			
Borealis	21		96	641	737			733			110			
Triumph		43	862	995	1,857									353
Mermaid	24							1,156			753			
Ocean Belle	23							1,056			562			
Arietis	22							680			426			
Katherine		21	288	403	691									159
San Diego	17							370			243			
Mary Taylor	18								128	306	434			369
C. G. Cox	26		176	449	625			906			22			
Umbrina	25							1,187			562			
Casco	19							1,309			351			
Viva	23							601			367			
Geneva	29							1,137			470			
Brenda								881			15			

Pelagic catch of the Canadian sailing fleet for 1895—Continued.

Vessels.	Hunters.		Bering Sea.			Japan coast.			Russian coast.			Northwest coast.		
	White.	Indians.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
'era	19	....	177	272	449	....	....	856	....	....	15	....	....	....
)iana	19	....	....	....	....	....	....	872	....	....	292	....	....	....
'ortuna	18	....	....	....	....	....	....	....	....	....	219	....	....	....
:. B. Marvin	27	....	125	251	376	....	....	946	....	....	10	....	....	....
)irector	23	....	317	300	617	....	....	....	60	11	71	....	....	....
Ienrietta	....	8	45	156	201	....	....	....	....	....	....	....	....	....
)ora Sieverd	....	36	766	813	1,577	....	....	....	....	....	....	287	216	503
'ictoria	....	25	601	566	1,167	....	....	....	....	....	....	96	91	187
abrador	....	11	107	152	259	....	....	....	....	....	....	32	19	51
)tto	....	32	432	364	796	....	....	....	....	....	30	....	....	285
'enelope	....	24	238	532	770	....	....	....	....	....	....	....	....	....
apphire	....	37	827	956	1,783	....	....	....	....	....	....	134	33	167
V. L. Rich	....	24	678	534	1,212	....	....	....	....	....	....	....	....	145
inoko	....	26	479	515	994	....	....	....	....	....	....	215	100	325
. C. Moore	....	30	730	812	1,542	....	....	....	....	....	....	64	41	105
'. M. Smith	....	41	564	594	1,158	....	....	....	....	....	....	216	79	285
urora	....	22	186	527	713	....	....	....	....	....	....	57	50	107
lascot	7	16	126	223	349	....	....	787	....	....	168	....	....	....
osie Olsen	....	....	....	....	....	....	....	627	....	....	....	....	....	....
)scar and Hattie	9	24	648	519	1,167	....	....	....	....	....	....	139	8	147
'eresa	8	17	335	532	867	....	....	....	....	....	....	42	60	102
:. D. Rand	7	16	182	459	641	....	....	....	....	....	....	107	36	143
aucy Lass	6	21	269	432	701	....	....	....	....	....	....	152	105	257
nterprise	7	30	947	782	1,720	....	....	....	....	....	....	166	55	221
eatrice (Shanghai)	5	28	608	838	1,446	....	....	....	....	....	....	156	74	230
eatrice (Vancouver)	....	18	93	109	202	....	....	....	....	....	....	....	....	....
'awn	6	28	460	316	776	....	....	....	....	....	....	....	....	248
ate	6	21	279	394	673	....	....	....	....	....	....	86	95	181
an Jose	5	20	318	251	569	....	....	....	....	....	....	....	....	143
'avorite	5	36	927	720	1,647	....	....	....	....	....	....	....	....	150
ay Belle	7	28	437	676	1,113	....	....	....	....	....	....	179	55	234
inateur	2	14	....	....	....	....	....	....	....	....	....	45	20	65
'isher Maid	1	12	....	....	....	....	....	....	....	....	....	66	43	109
ilmeny	3	8	....	....	....	....	....	....	....	....	....	8	7	15
ountain Chief	2	16	....	....	....	....	....	....	....	....	....	6	33	39
'achwellis	....	14	....	....	....	....	....	....	....	....	....	45	26	66
helby	10	....	....	....	....	....	....	....	....	....	....	....	....	124
ndian canoe catch	....	....	....	....	....	....	....	....	....	....	....	....	....	3,787
outh Bend	4	10	....	....	....	....	....	....	....	....	....	37	111	148
Total	....	....	15,877	19,896	35,773	....	....	18,686	....	....	6,605	....	....	9,972

SUMMATION OF THE PELAGIC CATCH FOR 1895.

	Pribilof Islands herd.			Commander Islands herd.			Grand total.
	Northwest coast.	Bering Sea.	Total.	Japan coast.	Russian coast.	Total.	
Canadian vessels	9,972	35,773	45,745	18,686	6,605	25,291	71,036
American vessels	2,005	7,924	9,929	12,362	1,079	13,441	23,370
Total	11,977	43,697	55,674	31,048	7,684	38,732	94,406

Table showing number of days during month of August, 1894, when pelagic sealing was carried on in Bering Sea, as indicated by log entries of a majority of the vessels of the sealing fleet.

Date.	Vessels.
Aug. 1	Mascot, Borealis, Earle, Favorite, Rich, Minnie, Etta and Beatrice.
2	Mascot, Therese, Etta, Triumph, Sapphire, Moore, and Katherine.
3	Mascot, San Jose, Borealis, Earle, Favorite, Rich, Therese, Minnie, Etta, Columbia, Beatrice, and Fawn.
4	Jose, Borealis, Earle, Favorite, Rich, Therese, Minnie, Etta, Columbia, Beatrice, Fawn, and L. Olsen.
5	Jose, Borealis, Favorite, Rich, Erland, Minnie, Etta, Columbia, Beatrice, and Fawn.
6	Jose, Ellen, Earle, Rich, Kilmeny, Therese, Deeahks, Erland, Minnie, Etta, Columbia, Fawn, and L. Olsen.
7	Ellen, Borealis, Earle, Favorite, Therese, Deeahks, Minnie, Etta, Columbia, Beatrice, Fawn, and L. Olsen.
8	Jose, Borealis, Ellen, Favorite, Kilmeny, Therese, Deeahks, Erland, Minnie, Columbia, and Beatrice.
9	Mascot, Borealis, Kilmeny, Deeahks, Columbia, Beatrice, Fawn, and Johnson.
10	Jose, Borealis, Ellen, Earle, Mascot, Favorite, Rich, Kilmeny, Deeahks, Minnie, Columbia, Beatrice, Fawn, Johnson, and L. Olsen.
11	Jose, Borealis, Ellen, Favorite, Kilmeny, Therese, Deeahks, Minnie, Etta, Sparks, Beatrice, Fawn, Johnson, and L. Olsen.
12	Jose, Borealis, Rich, Kilmeny, Erland, Minnie, Beatrice, and Johnson.
13	Rosie Olsen, Jane Grey, Arietis, Vera, Sapphire, and Aurora.
14	Borealis and Deeahks.
15	Borealis, Favorite, Grey, Rich, Deeahks, Minnie, Beatrice, Algar, Johnson, and Sparks.
16	R. Olsen, Rich, Deeahks, Erland, Minnie, and Fawn.
17	R. Olsen, Grey, Kilmeny, Minnie, Columbia, and Beatrice.
18	Borealis, R. Olsen, Earle, Favorite, Grey, Rich, Kilmeny, Deeahks, Erland, Minnie, Etta, Beatrice, Henrietta, Algar, Fawn, Johnson, and Sparks.
19	Favorite, Rich, Kilmeny, Deeahks, Minnie, Etta, Columbia, Henrietta, Beatrice, Algar, Johnson, and Sparks.
20	Kilmeny.
22	Ellen, R. Olsen, Earle, Favorite, Grey, Kilmeny, Deeahks, Erland, Minnie, Etta, Algar, and Fawn.
23	Favorite, Rich, Kilmeny, Therese, Deeahks, Minnie, Etta, Columbia, Beatrice, Algar, Fawn, Johnson, and Sparks.
24	Favorite, Rich, Kilmeny, Therese, Deeahks, Minnie, Etta, Columbia, Henrietta, Algar, Johnson, and Sparks.
25	Rich, Kilmeny, Erland, Minnie, Beatrice, and Sparks.
26	Grey, Rich, Kilmeny, Deeahks, Minnie, and Etta.
27	Grey, Rich, Kilmeny, Therese, Deeahks, Erland, Minnie, Etta, Beatrice, Algar, Fawn, and Johnson.
28	Grey, Rich, Kilmeny, Therese, Deeahks, Erland, Minnie, Etta, Columbia, Henrietta, Beatrice, Algar, Fawn, Johnson, and Sparks.
29	Grey, Rich, Kilmeny, Therese, Deeahks, Erland, Minnie, Etta, Columbia, Henrietta, Beatrice, Algar, Fawn, Johnson, and Sparks.
30	Grey, Rich, Kilmeny, Therese, Deeahks, Erland, Minnie, Etta, Henrietta, Beatrice, Algar, Fawn, Johnson, and Sparks.
31	Grey, Rich, Kilmeny, Deeahks, Erland, Minnie, Etta, Columbia, Beatrice, Henrietta, Algar, Fawn, Johnson, and Sparks.

Table showing number of days from September 1 to 21, 1894, when pelagic sealing was carried on in Bering Sea, as indicated by log entries of a majority of the vessels of the fleet.

Date.	Vessels.
Sept. 1	Grey, Rich, Kilmeny, Therese, Deeahks, Erland, Minnie, Columbia, Etta, Beatrice, Henrietta, Algar, Fawn, Johnson, and Sparks.
2	Grey, Rich, Kilmeny, Therese, Deeahks, Erland, Minnie, Etta, Columbia, Beatrice, Henrietta, Algar, Fawn, Johnson, and Sparks.
3	Therese, Columbia, and Katherine.
4	Triumph, Sapphire, Borealis, Ainoko, and Kate.
5	Rich, Columbia, Beatrice, Henrietta, Algar, Fawn, Johnson, and Sparks.
6	Beatrice, Henrietta, Fawn, and Sparks.
7	Erland, Henrietta, Algar, Fawn, Etta, Deeahks, and Johnson.
8	Beatrice, Erland, Etta, Deeahks, Johnson, and Therese.
9	Columbia, Beatrice, Fawn, Etta, Deeahks, Johnson, and Therese.
10	Columbia, Beatrice, Erland, Fawn, Deeahks, and Therese.
11	Sapphire and San Jose.
12	Erland, Fawn, Deeahks, and Mascot.
13	Columbia, Beatrice, Fawn, Deeahks, and Johnson.
14	Beatrice, Erland, Fawn, and Deeahks.
15	Beatrice, Erland, Fawn, Deeahks, and Johnson.
16	Beatrice, Etta, Kate, Saucy Lass, and Beatrice.
17	Beatrice, Etta, Shelby, Ainoko, and Beatrice.
18	Beatrice, Etta, Venture, Saucy Lass, and Beatrice.
19	Etta, Shelby, Beatrice, Sapphire, and Rosie Olsen.
20	Etta, Shelby, and Rosie Olsen.
21	Etta.

'able showing number of days during month of August, 1895, when pelagic sealing was carried on in Bering Sea, as indicated by log entries of a majority of the vessels of the sealing fleet.

Date.	Vessels.
ug. 1	Rattler, Maud S., M. M. Morrill, Enterprise, Vera, Victoria, Triumph, G. W. Prescott, Columbia, Deeahks, J. G. Swan, Bering Sea, Stella Erland, J. Eppinger, Herman, and Dora Siewerd.
2	Rattler, Maud S., Enterprise, Vera, Victoria, Triumph, G. W. Prescott, Columbia, Deeahks, Willard Ainsworth, J. G. Swan, Bering Sea, Stella Erland, J. Eppinger, Herman, and Dora Siewerd.
3	Maud S., Enterprise, Vera, Victoria, Triumph, Columbia, J. G. Swan, Bering Sea, Stella Erland, Alton, and Dora Siewerd.
4	Rattler, Maud S., M. M. Morrill, Enterprise, Vera, Victoria, Triumph, Columbia, Deeahks, Allie Algar, Willard Ainsworth, J. G. Swan, Bering Sea, Stella Erland, J. Eppinger, and Dora Siewerd.
5	Borealis, M. M. Morrill, Victoria, Triumph, Columbia, Deeahks, Allie Algar, and Stella Erland.
6	Bering Sea.
7	Maud S., Borealis, Vera, and Deeahks.
8	Maud S., Victoria, Columbia, Deeahks, J. G. Swan, Bering Sea, Stella Erland, Louisa, and Rattler.
9	Maud S., Borealis, M. M. Morrill, Enterprise, Vera, Victoria, Triumph, Deeahks, Willard Ainsworth, J. G. Swan, Bering Sea, Stella Erland, E. E. Webster, Bonanza, J. Eppinger, Rattler, and Dora Siewerd.
10	Maud S., M. M. Morrill, Enterprise, Vera, Victoria, Triumph, G. W. Prescott, Columbia, Deeahks, Willard Ainsworth, J. G. Swan, Bering Sea, Stella Erland, Louisa, E. E. Webster, Alton, Bonanza, J. Eppinger, and Therese.
11	Maud S., Enterprise, Vera, Victoria, Triumph, G. W. Prescott, Columbia, Deeahks, Allie Algar, M. M. Morrill, Willard Ainsworth, J. G. Swan, Bering Sea, Stella Erland, Louisa, E. E. Webster, Alton, J. Eppinger, and Therese.
12	Maud S., Vera, Victoria, Triumph, G. W. Prescott, Columbia, Deeahks, Allie Algar, M. M. Morrill, Willard Ainsworth, J. G. Swan, Bering Sea, Stella Erland, Louisa, E. E. Webster, Alton, Bonanza, J. Eppinger, and Therese.
13	Triumph.
14	Victoria, Triumph, Deeahks, M. M. Morrill, Willard Ainsworth, J. G. Swan, Louisa, Alton, Bonanza, J. Eppinger, Therese, Rattler, Herman, and Dora Siewerd.
15	Victoria, Triumph, G. W. Prescott, Columbia, Deeahks, Allie Algar, M. M. Morrill, Willard Ainsworth, J. G. Swan, Bering Sea, Stella Erland, Louisa, E. E. Webster, Alton, Bonanza, J. Eppinger, Therese, Rattler, and Herman.
16	Louisa, J. Eppinger, and Dora Siewerd.
17	Victoria, Triumph, G. W. Prescott, Columbia, Deeahks, Allie Algar, M. M. Morrill, Willard Ainsworth, J. G. Swan, Stella Erland, Louisa, E. E. Webster, Alton, Bonanza, J. Eppinger, Therese, Rattler, and Herman.
18	Triumph, G. W. Prescott, Deeahks, Louisa, E. E. Webster, Alton, J. Eppinger, Therese, Rattler, Herman, and Dora Siewerd.
19	Victoria, Triumph, G. W. Prescott, Columbia, Willard Ainsworth, J. G. Swan, Stella Erland, Louisa, J. Eppinger, Therese, Herman, and Dora Siewerd.
20	Victoria, Triumph, G. W. Prescott, Columbia, Deeahks, Allie Algar, M. M. Morrill, Willard Ainsworth, J. G. Swan, Bering Sea, Stella Erland, Louisa, E. E. Webster, Alton, Bonanza, J. Eppinger, Therese, Rattler, and Herman.
21	Columbia, Deeahks, G. W. Prescott, Allie Algar, M. M. Morrill, Willard Ainsworth, J. G. Swan, Bering Sea, Stella Erland, Louisa, E. E. Webster, Alton, Bonanza, J. Eppinger, Therese, Rattler, Herman, and Dora Siewerd.
22	G. W. Prescott, M. M. Morrill, Willard Ainsworth, J. G. Swan, Bering Sea, Stella Erland, Louisa, E. E. Webster, Alton, Bonanza, J. Eppinger, Therese, Rattler, Herman, and Dora Siewerd.
23	Bering Sea, Stella Erland, Louisa, Therese, and Herman.
24	Columbia, G. W. Prescott, Allie Algar, M. M. Morrill, Willard Ainsworth, Stella Erland, E. E. Webster, Alton, J. Eppinger, Rattler, and Dora Siewerd.
25	Allie Algar, Louisa, J. Eppinger, Therese, Rattler, and Herman.
26	Allie Algar, Columbia, M. M. Morrill, J. G. Swan, Bering Sea, Louisa, E. E. Webster, Alton, J. Eppinger, Therese, Rattler, Herman, and Dora Siewerd.
27	Deeahks, G. W. Prescott, Allie Algar, Columbia, M. M. Morrill, Willard Ainsworth, J. G. Swan, Bering Sea, Stella Erland, Louisa, E. E. Webster, Alton, Bonanza, J. Eppinger, Therese, Rattler, Herman, and Dora Siewerd.
28	Deeahks, G. W. Prescott, Allie Algar, Columbia, M. M. Morrill, Willard Ainsworth, J. G. Swan, Bering Sea, Stella Erland, Louisa, E. E. Webster, Alton, Bonanza, J. Eppinger, Therese, Rattler, Herman, and Dora Siewerd.
29	Bonanza.
30	Deeahks and G. W. Prescott.
31	Deeahks, G. W. Prescott, Columbia, J. G. Swan, Bering Sea, Alton, Bonanza, Herman, and Dora Siewerd.

Table showing number of days from September 1 to 21, 1895, when pelagic sealing was carried on in Bering Sea, as indicated by log entries of a majority of the vessels of the sealing fleet.

Date.	Vessels.
Sept. 1	Deeahks, G. W. Prescott, Columbia, M. M. Morrill, Willard Ainsworth, J. G. Swan, Bering Sea, Louisa, E. E. Webster, Alton, Bonanza, J. Eppinger, Therese, Rattler, Herman, and Dora Sieward.
2	Deeahks, G. W. Prescott, Columbia, M. M. Morrill, J. G. Swan, Bering Sea, Stella Erland, Louisa, Alton, Bonanza, J. Eppinger, Therese, Rattler, Herman, and Dora Sieward.
3	G. W. Prescott, Allie Algar, Columbia, Bering Sea, and Louisa.
4	J. G. Swan and Bering Sea.
5	
6	Therese and Rattler.
7	Deeahks, Columbia, M. M. Morrill, Bering Sea, Stella Erland, Bonanza, and Dora Sieward.
8	Deeahks, G. W. Prescott, Columbia, M. M. Morrill, Willard Ainsworth, Bering Sea, Louisa, E. E. Webster, Bonanza, J. Eppinger, Therese, Rattler, Herman, and Dora Sieward.
9	Deeahks, G. W. Prescott, Columbia, M. M. Morrill, Willard Ainsworth, Bering Sea, Stella Erland, Louisa, Bonanza, J. Eppinger, Therese, Rattler, Herman, and Dora Sieward.
10	Deeahks, G. W. Prescott, Columbia, M. M. Morrill, J. G. Swan, Bering Sea, Stella Erland, Louisa, Bonanza, Rattler, and Dora Sieward.
11	Deeahks, Columbia, and Bonanza.
12	G. W. Prescott.
13	Bering Sea, Louisa, and Herman.
14	
15	Deeahks, Bering Sea, Stella Erland, J. Eppinger, Rattler, and Dora Sieward.
16	Columbia, Bering Sea, and Stella Erland.
17	
18	Columbia, Louisa, and Rattler.
20	Stella Erland, Rattler, and Dora Sieward.
21	Bering Sea.

Miscellaneous data on pelagic sealing in the North Pacific Ocean and Bering Sea from 1878 to 1893, showing positions where fur seals were taken.

[Data collected by C. H. Townsend and A. B. Alexander.]

AMERICAN SCHOONER SAN DIEGO, D. McLEAN, MASTER—1883.

Date.	Latitude.	Longitude.	Seals.	Date.	Latitude.	Longitude.	Seals.
1883.	N.	W.		1883.	N.	W.	
Mar. 30	37 55	125 30	13	July 17	55 34	163 30	22
Apr.	47 23	127 24	29	19	55 40	169 12	.....
May	51 04	131 45	.....	—	55 00	169 00	28

AMERICAN SCHOONER MARY ELLEN, D. McLEAN, MASTER—1884.

1884.	N.	W.		1884.	N.	W.	
Feb. 1, 2, 3	.....	.....	12	Apr. 7	47 43	127 43	13
5	38 53	.....	6	8	47 56	127 07	2
8	37 18	.....	7	10	47 33	125 44	48
9	39 30	124 40	4	11, 12, 14	.....	.....	11
18	38 13	128 54	.....	16	47 53	125 47	13
20	39 35	.....	6	18	48 04	126 13	11
21, 22, 23, 27, 28	.....	.....	35	19	47 57	127 10	33
29	42 02	.....	38	20	48 05	.....	13
Mar. 1	40 50	.....	21	24	50 12	128 30	14
2	.....	.....	21	25	49 55	128 50	2
3	42 14	.....	24	26	49 54	128 34	13
4	.....	.....	21	May 11	48 33	126 30	15
5	42 18	126 50	7	12	48 26	127 30	12
7	43 10	125 30	4	13	48 35	128 15	5
8	42 58	.....	23	14	49 15	127 50	25
12	44 29	125 48	12	22	48 40	127 30	6
13	44 48	126 12	3	23	48 30	127 45	14
14	44 50	125 39	23	24	48 28	129 30	3
15	44 22	125 31	16	25	50 31	131 40	7
16	45 54	124 50	19	July 1	55 50	166 50	2
17	46 38	126 00	8	2	.....	.....	4
19, 26, 27	.....	.....	21	8	56 30	167 30	13
28	47 37	126 06	12	9	56 00	167 50	23
29	47 39	125 58	4	10	55 10	167 35	16
30	47 43	126 00	23	13	55 50	167 47	7
31	47 10	125 00	14	14	55 50	168 35	44
Apr. 4	47 42	126 03	21	15	55 56	168 24	96
5	47 31	126 44	20	18	55 52	168 00	64
6	47 24	126 19	12	19	55 52	167 30	23

***Miscellaneous data on pelagic sealing in the North Pacific Ocean and Bering Sea from 1878 to 1893, showing positions where fur seals were taken*—Continued.**

AMERICAN SCHOONER MARY ELLEN, D. McLEAN, MASTER—1884—Continued.

Date.	Latitude.	Longitude.	Seals.	Date.	Latitude.	Longitude.	Seals.
1884.	N.	W.		1884.	N.	W.	
July 21	55 30	168 00	22	Aug. 9	55 10	169 30	140
24	55 09	166 49	43	10	55 13	169 39	67
25	54 30	168 00	4	11	55 08	170 00	63
26	54 40	168 50	43	12	55 10	169 05	14
27	55 00	168 30	4	16	55 00	169 00	28
31	54 20	170 15	25	17	54 35	168 40	41
Aug. 1	54 30	168 00	15	18	54 43	166 20	26
2	54 41	170 28	6	19	54 25	167 20	10
3	54 47	168 30	63	20	54 53	165 15	50
4	54 15	169 00	8	21	54 50	165 20	53
6	55 18	168 19	10	22	54 50	165 40	66
7	55 25	169 00	131	23 *a*			2
8	55 18	169 39	21				

a Bound for walrus.

AMERICAN SCHOONER MARY ELLEN, D. McLEAN, MASTER—1885.

1885.	N.	W.		1885.	N.	W.	
Jan. 26	38 34	124 00	4	May 28	56 16	137 51	48
29	34 42	124 30	14	29	56 27	137 43	2
Feb. 4	39 43	124 28	15	31			7
5	39 42	124 10	21	June 1	58 11	138 10	7
9	39 35	124 20	16	2	58 00	138 23	2
13	39 36	124 40	1	3	57 40	139 00	38
16	39 50	126 00	3	4	57 55	140 00	8
17			33	5	57 49	139 47	15
20	40 11		14	6	58 20	144 30	4
21	39 55	125 10	10	8	56 13	148 21	3
25			5	9	55 58	151 49	1
28	39 50	124 30	9	11	54 20	157 18	1
Mar. 1	39 38	125 55	7	12	53 50	158 10	43
6	38 57	124 25	29	15	53 37	162 33	3
7	39 00		39	16	53 30	164 30	20
8	41 20	125 35	3	19	53 00	167 00	14
9	42 50	124 40	3	26			1
11	43 02	125 00	45	30	55 40	165 17	1
12	43 07	125 40	26	July 1	56 17	168 23	31
14	43 19	125 00	27	2			1
15	43 50	125 00	9	4	56 19	168 17	39
17	44 54	125 15	2	8			1
18	45 09	125 15	8	9	56 51	169 07	30
19	45 40	124 30	11	10	55 45	167 45	18
20	45 40	125 00	13	12	55 26	168 48	95
21	46 00		2	13			1
24	46 51	124 50	3	14			3
25	46 57	125 30	18	15			28
26	47 25	125 30	14	16			14
27	47 46	125 00	15	17			5
28	47 40	125 12	12	18	55 46		33
29	48 05	125 30	18	19	55 28	169 10	75
30	48 00	125 30	8	20	55 26	169 02	7
31	48 10	125 30	4	24			8
Apr. 1	48 42	125 30	2	26	55 00	169 04	50
3	47 44	125 27	11	27			2
4	48 14	126 25	12	28	55 14	168 04	67
6	48 01	126 50	15	29	55 10	168 07	43
10	48 10	126 40	1	30			32
11	49 00	127 00	13	31			23
16	48 20	126 15	1	Aug. 1	54 55	168 00	55
17	48 34		2	2	54 45	168 50	13
18			10	3	55 38	168 52	19
27			6	9	55 10	169 05	44
May 11	49 00	127 00	6	12	55 08	168 13	39
12	49 23		4	14	55 20	170 15	20
15	49 24		13	15	55 20	170 15	47
17	50 30	129 20	3	16	55 26	169 00	41
19	51 37	130 37	7	17	53 30	169 30	0
20	52 12	132 48	17	18	54 00	168 10	23
21	52 39	132 50	5	19	54 24	168 00	83
22	54 32	133 58	3	20	54 41	167 40	2
24	56 20	137 00	4	21	55 18		24
25	56 39	137 10	26	22	54 43	166 30	21
26	56 45	137 51	8	23	54 40	168 20	25
27	56 34	137 56	19	24	54 40	168 20	7

***Miscellaneous data on pelagic sealing in the North Pacific Ocean and Bering Sea from 1878 to 1893, showing positions where fur seals were taken*—Continued.**

AMERICAN SCHOONER MARY ELLEN, D. McLEAN, MASTER—1885—Continued.

Date.	Latitude.	Longitude.	Seals.	Date.	Latitude.	Longitude.	Seals.
1885.	N.	W.		1885.	N.	W.	
Aug. 25	54 31	168 27	104	Aug. 30	54 22	169 10	21
26	54 26	168 23	72	Sept. 1	55 30	168 45	34
27	54 26	169 26	15	2	55 00	168 00	43
29	54 09	169 00	48	3	55 12	167 10	34

AMERICAN SCHOONER MARY ELLEN, D. McLEAN, MASTER—1886.

1886.	N.	W.		1886.	N.	W.	
Feb. 3	39 00	124 10	1	June 1	56 41	138 50	139
7	40 00	124 50	10	2	56 38	139 00	151
8	40 10	125 27	9	3	56 50	138 39	44
9	39 35	125 00	4	6	57 50	139 55	95
11	40 01	124 40	3	7	57 40	139 35	125
17	38 31	124 08	36	8	57 36	139 57	197
18	38 33	123 50	44	9	57 31	140 41	170
19	38 30	123 47	29	10	57 09	140 48	172
20	38 35	.....	8	11	57 05	139 50	38
21	38 33	.....	4	12	57 10	139 40	22
Mar. 3	38 00	123 34	23	July 2	54 40	168 45	24
4	38 31	123 31	14	3	54 20	168 32	27
5	38 48	123 50	11	8	54 45	168 35	157
7	39 47	124 23	2	12	55 04	169 25	70
9	40 27	125 00	5	13	55 03	169 42	129
15	40 40	124 48	21	15	54 58	168 10	60
24	48 15	125 26	5	17	55 04	169 33	57
25	.....	.....	1	18	54 50	168 50	96
28	47 45	125 31	24	21	54 58	170 28	51
29	47 51	125 11	26	22	54 36	170 40	135
30	48 00	125 20	9	24	54 45	168 30	74
31	47 52	125 00	9	25	54 51	.....	49
Apr. 1	47 49	125 00	7	28	54 51	168 34	31
2	47 36	124 50	5	29	54 40	168 24	230
3	47 34	125 08	19	30	54 45	168 47	135
5	48 20	126 56	20	31	.....	.....	45
7	48 36	127 02	3	Aug. 1	54 45	168 00	152
9	50 17	128 30	4	2	54 50	168 00	87
10	50 12	128 17	1	3	54 51	169 15	45
11	49 51	128 16	90	4	54 30	168 30	8
12	50 06	.....	16	5	54 00	168 10	6
13	49 54	128 15	10	7	53 40	.....	93
22	48 33	125 56	13	8	53 30	.....	61
24	48 15	125 40	34	9	54 00	.....	88
28	47 45	126 00	5	10	53 50	170 30	127
May 2	48 15	125 15	18	11	53 15	170 00	18
3	48 14	125 25	32	15	53 51	169 45	44
4	48 27	125 56	63	19	54 40	169 00	146
6	49 49	127 27	20	21	.....	.....	58
7	49 30	128 20	17	23	54 45	167 20	37
8	49 54	128 22	53	24	.....	.....	31
10	49 10	127 20	24				

AMERICAN SCHOONER MARY ELLEN, D. McLEAN, MASTER—1887.

1887.	N.	W.		1887.	N.	W.	
Jan. 24	41 18	125 45	2	Apr. 6	49 14	128 16	18
Feb. 2	37 44	124 10	23	7	.....	.....	33
7	38 00	124 00	7	8	49 33	127 54	7
17	.....	.....	5	10	49 36	127 29	5
Mar. 1	38 00	124 00	4	12	50 07	128 45	15
5	40 53	.....	4	13	.....	.....	28
9	47 38	125 35	7	15	49 30	127 30	14
15	47 38	125 35	2	May 9	50 17	128 40	38
17	48 00	126 00	5	11	50 01	129 00	19
19	48 18	126 36	39	13	.....	.....	5
20	48 00	126 20	27	14	52 00	134 12	71
21	48 00	126 34	10	15	.....	.....	3
22	48 00	126 30	59	18	55 45	136 34	10
23	48 00	126 30	6	19	55 38	136 00	96
24	48 06	127 40	6	21	56 13	136 00	1
27	47 42	126 00	2	22	56 52	139 11	20
28	48 00	126 00	29	23	57 26	139 44	24
30	49 00	127 00	10	24	56 48	138 57	24

iscellaneous data on pelagic sealing in the North Pacific Ocean and Bering Sea from 1878 to 1893, showing positions where fur seals were taken—Continued.

AMERICAN SCHOONER MARY ELLEN, D. McLEAN, MASTER—1887—Continued.

Date.	Latitude.	Longitude.	Seals.	Date.	Latitude.	Longitude.	Seals.
1887.	N.	W.		1887.	N.	W.	
ay 30	57 43	138 00	18	July 9	54 44	168 25	4
31	.....	.....	7	11	.....	.....	5
ine 1	56 36	139 00	32	12	55 32	167 36	38
2	.....	.....	34	13	55 47	168 10	134
5	56 53	139 32	9	17	55 24	168 04	54
9	57 32	143 02	23	18	55 30	167 45	103
11	57 44	148 28	5	21	55 51	168 10	29
12	55 46	150 56	1	22	55 25	167 40	144
14	55 01	156 17	36	24	55 20	167 20	74
15	54 38	156 20	7	25	55 41	167 51	49
16	54 30	.....	1	26	55 15	167 40	49
19	53 43	162 02	1	27	.....	.....	22
20	52 57	165 18	10	31	54 28	169 00	70
22	52 43	167 05	27	Aug. 1	54 41	169 00	95
25	53 57	(a)	.....	3	54 20	169 00	11
26	53 30	172 30	28	5	54 15	171 00	239
27	53 17	172 16	20	6	54 15	170 30	45
28	52 50	171 10	10	7	54 22	170 30	12
29	54 40	170 20	2	8	54 00	171 00	53
30	55 40	170 10	1	9	54 18	171 30	23
ly 1	54 00	170 48	8	15	54 19	170 01	29
2	54 02	.....	39	17	53 53	170 27	19
4	54 19	167 21	29	18	53 47	169 57	20
5	54 20	167 18	37	19	53 37	170 05	87
8	.....	.....	3				

a Bering Sea.

CANADIAN SCHOONER FAVORITE (BERING SEA), D. McLEAN, MASTER—1886.

1886.	N.	W.		1886.	N.	W.	
ly 8	55 54	167 25	11	July 29	55 15	167 43	119
9	55 58	167 08	16	30	55 24	168 08	106
10	58 37	169 09	78	31	55 17	168 17	128
11	55 18	167 21	113	Aug. 1	54 50	168 49	32
12	55 19	167 23	106	2	54 40	168 50	142
13	55 25	166 56	173	3	54 39	169 23	(a)
14	55 20	167 05	149	4	54 35	168 40	.....
15	55 30	167 20	24	5	54 50	170 07	.....
16	55 30	168 00	47	6	55 06	170 40	.....
17	55 30	168 00	139	7	54 51	170 49	.....
19	55 39	168 25	113	8	54 46	171 01	.....
20	55 32	169 11	124	9	55 03	170 40	.....
21	55 35	168 50	45	13	54 45	168 17	.....
22	55 32	167 10	3	14	55 24	168 35	.....
23	55 26	167 15	92	15	55 30	169 10	.....
24	55 21	167 30	31	16	56 15	166 45	.....
27	54 55	167 30	16	17	55 40	165 20	.....
28	55 01	167 49	154	18	55 12	165 40	.....

a From August 2 to the end of the cruise no record of seals written in the log.

CANADIAN SCHOONER FAVORITE (BERING SEA), D. McLEAN, MASTER—1887.

1887.	N.	W.		1887.	N.	W.	
uly 10	55 17	166 41	2	Aug. 2	55 16	168 29	29
11	55 42	168 37	23	4	55 05	168 45	83
12	55 53	168 30	13	5	55 45	168 50	105
13	55 40	168 18	*a* 54	6	55 45	168 47	108
14	55 23	168 30	.....	8	55 38	169 18	109
15	55 20	168 24	13	9	55 47	169 23	36
16	55 12	168 30	41	12	55 48	169 20	103
17	55 12	168 30	46	15	55 30	169 00	10
18	55 15	168 25	68	17	55 20	167 56	26
19	55 28	169 00	.....	18	55 03	168 20	147
20	55 38	169 12	1	19	54 37	168 17	3
21	55 19	169 00	59	20	54 30	168 25	14
22	55 13	168 50	5	22	54 30	168 50	57
23	55 14	168 45	18	23	54 25	169 00	16
24	55 27	168 40	171	24	54 20	169 12	122
25	55 17	168 50	9	25	54 06	170 04	140
26	55 05	168 40	4	26	53 55	170 00	19
29	55 20	167 40	4				
31	55 06	167 45	56	Total	.....	.....	1,810
ug. 1	55 30	168 30	86				

a This catch made by white hunters.

Miscellaneous data on pelagic sealing in the North Pacific Ocean and Bering Sea from 1878 to 1893, showing positions where fur seals were taken—Continued.

AMERICAN SCHOONER HENRY DENNIS (NORTHWEST COAST), R. H. MINER, MASTER—1891.

Date.	Latitude.	Longitude.	Seals.	Date.	Latitude.	Longitude.	Seals.
1891.	N.	W.		1891.	N.	W.	
Apr. 29	53 40	133 30	30	May 29	57 31	136 50	24
May 2	54 41	135 49	3	30	57 38	136 46	66
6	54 42	136 27	21	31	57 28	137 20	16
7	51 15	137 48	8	June 4	58 28	141 10	17
8	57 40	136 51	90	6	58 [illegible]	140 27	18
9	57 40	136 51	64	7	58 12	140 27	2
10	57 40	136 51	64	8	58 31	141 34	20
11	57 40	136 51	55	9	59 03	140 37	13
12	57 40	136 51	30	10	58 57	140 45	75
15	57 49	138 50	35	11	58 34	140 56	1
18	59 08	141 08	49	14	58 39	144 25	13
19	58 58	141 19	1	16*a*	57 45	150 47	1
22	58 48	140 18	31	17*b*	57 45	150 47	9
25	57 20	136 49	1	18	57 05	151 00	3
26	57 35	136 52	10	July 27	51 32	164 44	1
27	57 35	136 52	1				

a Portlock Bank, 50 fathoms, 600 pounds codfish. *b* Codfish plenty.

AMERICAN SCHOONER HENRY DENNIS (NORTHWEST COAST AND COPPER ISLAND REGION), R. H. MINER, MASTER—1892.

1892.	N.	W.		1892.	N.	W.	
Jan. 20	48 13	125 21	.....	May 17	58 41	147 50	13
21	47 23	125 37	1	18	58 23	140 40	11
23	46 45	124 30	1	21	57 06	149 38	15
Feb. 5	46 21	126 38	24	22	57 18	150 05	18
6	46 20	127 00	9	25	57 26	150 18	1
14	46 51	124 46	9	29	58 15	158 20	84
15	46 48	124 36	30	30	58 02	150 15	8
16	46 58	124 42	8	31	.....	.....	121
17	46 27	125 58	6	June 1	58 00	150 00	20
18	46 17	124 57	4	7	55 40	152 55	1
19	46 19	124 54	7	8	55 31	154 40	5
Mar. 19	48 19	125 54	4	9	55 20	155 10	1
20	48 36	126 59	1			E.	
21	49 29	127 47	2	July 2*b*	52 24	169 49	.....
Apr. 3	57 12	137 38	5	4*c*	.....	.....	7
5	56 36	138 06	3	6	54 00	168 28	5
6	57 11	137 37	8	10	54 09	168 53	5
7	57 17	137 52	46	14	53 46	166 52	6
8	57 11	138 07	20	15	54 01	168 28	34
10	56 47	138 40	58	17	54 14	179 17	1
12	56 55	138 07	65	22	53 59	170 00	2
15	55 58	139 51	1	23	54 13	169 39	2
16	56 55	138 30	27	25	54 27	169 38	38
18	57 41	139 27	61	26	54 39	169 20	3
22	57 52	140 13	40	27	54 01	169 17	27
23	57 52	140 13	87	28	53 52	169 21	37
24	58 56	141 48	5	29	53 46	169 30	7
25	58 56	141 48	116	Aug. 1	56 37	168 30	1
26	.....	.....	97	3	56 40	168 38	13
27	.....	.....	173	4	56 27	168 13	40
28	.....	.....	101	5	56 20	168 07	108
29*a*	.....	.....	31	6	56 37	168 10	26
30	.....	.....	60	7	56 43	167 50	1
May 1	59 14	142 18	1	9	54 21	170 00	2
2	58 45	143 16	7	10	53 35	169 49	15
4	59 28	145 09	39	11	53 53	168 30	2
5	59 20	145 03	38	12	53 35	168 50	24
6	59 17	144 44	4	14	53 10	167 14	1
8	59 09	147 05	16	18	53 18	169 45	13
11	59 15	146 27	8	19	53 41	169 51	20
12	59 06	145 45	179	22	52 36	170 53	3
13	59 15	146 27	15	23	52 18	169 10	68
14	59 16	145 30	3	26	52 38	169 45	20
15	59 22	148 57	1	27	52 24	170 02	31
16	59 13	145 12	25	28	52 24	170 06	1

a Mount St. Elias north 50 miles. *b* A few seals seen. *c* Copper Island in sight, bearing west.

Miscellaneous data on pelagic sealing in the North Pacific Ocean and Bering Sea from 1878 to 1893, showing positions where fur seals were taken—Continued.

CANADIAN SCHOONER UMBRINA (JAPAN COAST)—1893.

Date.	Latitude.	Longitude.	Seals.	Date.	Latitude.	Longitude.	Seals.
1893.	N.	E.		1893.	N.	E.	
pr. 19	38 00	143 00	.....	May 23	40 15	143 33	43
20	38 30	143 00	91	24	41 00	143 37	52
22	39 30	143 15	.....	25	40 56	143 23	95
24	39 40	144 22	3	26	40 50	143 10	19
27	38 30	145 55	31	29	39 40	144 20	.....
28	37 30	145 40	79	30	40 30	144 00	6
29	37 15	145 17	71	June 2	39 50	145 05	26
30	37 10	145 10	51	3	40 11	145 05	47
ay 1	37 18	145 30	45	4	40 50	144 35	13
2	37 07	145 20	191	6	42 00	145 05	7
3	37 20	145 09	10	7	41 27	145 35	32
6	37 04	145 00	.....	8	41 55	143 56	79
7	37 36	145 15	4	9	41 57	143 50	51
8	37 37	145 40	19	10	42 04	143 50	9
10	39 30	144 40	61	11	42 16	144 35	29
11	40 20	145 35	9	12	42 55	145 20	4
12	39 58	144 45	75	13	43 00	147 00	.....
13	40 09	145 49	.....	14	43 06	147 56	.....
14	40 00	144 51	84	15	43 06	147 41	29
15	39 50	144 45	18	16	43 09	147 20	85
16	39 45	144 15	65	18	43 15	147 00	25
17	39 59	145 55	27	19	43 35	147 05	35
18	39 25	145 15	61	20	43 25	147 18	4
19	40 20	144 40	105	21	43 12	147 33	10
20	40 22	144 35	2	22	43 12	147 33	8
22	40 10	143 40	2	23	.....	.....	7

CANADIAN SCHOONER TRIUMPH (JAPAN COAST), COX, MASTER—1892.

	N.	E.			N.	E.	
pr. 1	39 17	145 06	37	Apr. 27	40 04	145 10	35
2	39 36	145 02	95	28	39 43	145 39	155
6	40 00	145 08	64	29	39 26	145 47	67
7	40 28	145 28	9	30	39 23	146 26	25
9	39 48	145 10	168	May 3	40 02	145 41	15
10	39 49	145 05	111	6	39 36	145 06	7
11	39 50	145 10	13	7	40 22	145 32	15
14	40 13	145 26	43	8	40 15	146 18	33
15	40 10	145 05	104	9	40 18	145 38	39
16	45 09	144 09	38	10	40 36	145 12	17
17	40 30	144 25	9	11	40 05	145 20	48
18	39 23	145 07	18	12	40 11	145 13	28
20	40 53	145 28	13	14	40 11	145 32	61
21	40 07	145 50	27	15	40 39	145 21	10
24	39 37	145 08	103	16	40 46	145 21	34

CANADIAN SCHOONER TRIUMPH (NORTHWEST COAST), COX, MASTER—1893.[a]

	N.	W.			N.	W.	
pr. 10	57 48	138 38	.....	May 7	57 41	141 52	103
11	57 57	138 57	.....		57 38	140 59	.....
12	58 02	139 09	.....		57 45	141 22	.....
22	57 25	139 19	.....		57 57	142 37	.....
23	57 21	138 38	.....	16	58 06	141 43	.....
29	57 51	139 31	.....	17	58 08	141 50	[b] 239
30	58 31	140 06	.....				

[a] Captain Cox has found seals plentiful in September in latitude 49° 40′ and longitude 147°. A ood sealing ground is Mount Fairweather, 115 miles north one-half west.
[b] In three days.

***Miscellaneous data on pelagic sealing in the North Pacific Ocean and Bering Sea from 1878 to 1893, showing positions where fur seals were taken*—Continued.**

CANADIAN FUR-SEAL CATCH IN 1893.

[From official sources.]

[Catch by each vessel of the British Columbia fleet and the place where the skins were taken.]

Vessel.	British Columbia coast.	Japan coast.	Russian coast.	Total.	Vessel.	British Columbia coast.	Japan coast.	Russian coast.	Total.
Triumph	1,713	.....	623	2,336	Wanderer	206	.....	.....	206
Sapphire	1,262	.....	341	1,603	Viva	.....	1,441	30	1,471
E. B. Marvin	1,014	.....	517	1,531	May Belle	.....	1,852	.....	1,852
Mascot	857	.....	327	1,184	Umbrina	.....	1,827	625	2,452
Dora Sieverd	1,426	.....	434	1,860	Penelope	.....	2,291	.....	2,291
Labrador	263	.....	.....	263	Vera	.....	1,910	99	2,009
Minnie	489	.....	20	509	Pioneer	1,050	.....	.....	1,050
Annie E. Paint	740	.....	401	1,141	Otto	630	.....	397	1,027
Mischief	344	.....	.....	344	Mary Taylor	845	.....	240	1,085
Diana	707	.....	294	1,001	Brenda	845	.....	408	1,253
Venture	82	.....	.....	82	Libbie	.....	1,242	389	1,631
Mermaid	.....	940	315	1,255	City of San Diego	.....	942	101	1,043
Fawn	806	.....	77	883	Geneva	.....	1,612	454	2,066
Walter A. Earle	1,622	.....	.....	1,622	Casco	.....	1,473	199	1,672
Beatrice, of Victoria	655	.....	.....	655	Carlotta G. Cox	.....	2,396	376	2,772
Ocean Belle	1,316	.....	547	1,863	Oscar and Hattie	.....	1,178	1,020	2,198
Mountain Chief	128	.....	.....	128	Teresa	.....	677	147	824
Arietis	.....	920	464	1,384	Sadie Turpel	.....	927	475	1,402
Cape Beale	86	.....	.....	86	Maud S	.....	989	.....	989
Kate	293	.....	.....	293	Mary Ellen	.....	1,573	406	1,979
Favorite	949	.....	.....	949	W. L. Rich	1,321	.....	517	1,838
Borealis	1,307	.....	.....	1,307	Annie C. Moore	.....	822	333	1,155
Ainoko	1,344	.....	46	2,390	W. P. Hall	.....	735	263	998
W. P. Sayward	596	.....	.....	596	Beatrice, of Vancouver	950	.....	.....	950
Katherine	352	.....	363	715	C. D. Rand	1,060	.....	.....	1,060
San José	242	.....	.....	242	Indian canoe catch	2,035	66	.....	2,101
Enterprise	.....	1,027	274	1,301					
Agnes McDonald	.....	2,333	433	2,766					
Victoria	420	.....	.....	420	Total	28,613	29,173	11,955	69,741
Rosie Olsen	358	.....	.....	358					

Positions of fur seals observed by Lieut. Commander Z. L. Tanner, U. S. N., from steamer City of Peking in 1878.

Date.	Latitude.	Longitude.
1878.	N.	W.
July 1	43 01	161 23
		E.
June 25	42 55	162 14
June 27	42 44	172 40
June 28	42 43	177 43

Positions where fur seals were taken by American and Canadian vessels in Bering Sea and the North Pacific Ocean in 1894.

[From official sources.]

AMERICAN SCHOONER ELLA JOHNSON (BERING SEA), R. H. MINER, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Aug. 9	54 24	166 45	1	.....	1
10	54 46	167 20	4	55	59
11	54 47	168 18	.....	9	9
12	55 05	168 55	20	95	115
15	54 37	168 26	15	48	63
18	54 15	168 43	18	47	65
19	54 17	168 25	21	81	102
23	54 39	167 07	14	71	85
24	54 30	167 20	10	70	80
27	55 01	167 58	2	10	12
28	57 37	169 03	5	37	42
29	54 15	168 57	35	63	98
30	54 07	168 34	15	34	49
31	54 10	168 51	16	32	48
Sept. 1	54 09	168 33	40	63	103
2	54 29	168 39	10	45	55
5	54 29	167 42	20	11	31
7	54 52	168 54	28	40	68
8	54 49	168 54	25	30	55
9	54 07	168 56	15	30	45
13	54 52	169 03	2	4	3
15	54 41	167 57	6	17	26
Total	.....	.....	322	892	1,214

AMERICAN SCHOONER DEEAHKS (BERING SEA), JAMES CLAPLANHOY, MASTER.

[Catch, 1,023; 155 males, 868 females.]

1894.	N.	W.			
Aug. 6	54 33	167 00	.....	.....	11
7	54 41	168 00	.....	.....	7
8	54 53	170 52	.....	.....	11
9	55 36	172 17	.....	.....	2
10	56 02	172 27	.....	.....	55
11	56 10	172 37	.....	.....	20
14	56 21	173 09	.....	.....	1
15	55 43	172 39	.....	.....	9
16	55 35	172 36	.....	.....	1
18	55 16	171 05	.....	.....	23
19	55 11	170 42	.....	.....	13
22	54 10	167 00	.....	.....	51
23	54 25	167 30	.....	.....	36
24	54 35	167 38	.....	.....	40
26	54 59	167 00	.....	.....	5
27	55 03	166 34	.....	.....	12
28	54 37	167 21	.....	.....	153
29	54 30	167 14	.....	.....	91
30	54 30	167 14	.....	.....	58
31	54 54	166 56	.....	.....	14
Sept. 1	54 25	166 47	.....	.....	170
2	54 34	167 18	.....	.....	80
7	54 35	166 57	2	2	4
8	54 43	166 49	9	21	30
9	54 34	166 51	17	34	51
10	54 34	166 51	1	4	5
12	54 43	167 33	.....	1	1
13	54 42	167 16	5	7	12
14	54 35	166 45	4	13	17
15	54 35	166 45	13	27	40

NOTE.—Data for sex not collected by me from August 6 to September 2, but reported from custom-house at Port Townsend as 155 males, 868 females.—C. H. T.

Positions where fur seals were taken by American and Canadian vessels in Bering Sea and the North Pacific Ocean in 1894—Continued.

AMERICAN SCHOONER STELLA ERLAND (BERING SEA).

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Aug. 5	54 44	167 23	7	37	44
6	54 56	167 41	3	13	16
8	56 04	165 59	.....	6	6
12	58 24	168 01	.....	1	1
16	58 11	172 27	.....	1	1
18	57 48	172 28	2	33	35
22	56 30	172 35	3	21	24
25	56 13	171 30	.....	1	1
27	54 40	168 59	1	5	6
28	54 24	168 57	5	9	14
29	53 47	169 35	14	32	46
30	53 35	169 41	31	51	82
31	53 34	169 21	23	35	58
Sept. 1	53 38	169 25	39	59	98
2	53 47	169 40	21	29	50
7	54 20	167 47	17	8	25
8	54 46	166 55	32	55	87
10	54 55	166 59	3	12	15
12	55 09	166 55	1	.....	1
14	54 48	166 36	7	22	29
15	54 47	166 15	10	112	122
Total	.....	.....	219	542	761

AMERICAN SCHOONER IDA ETTA (BERING SEA), B. B. WHITNEY, MASTER.

[Crew, 17; boats, 9; hunters, 9.]

1894.	N.	W.			
Aug. 1	54 40	169 00	5	2	7
2	55 06	170 46	6	8	14
3	54 46	171 25	3	4	7
4	54 50	171 34	12	51	63
5	54 49	171 37	1	12	13
6	55 33	173 48	2	6	8
7	55 50	173 35	6	12	18
11	58 00	173 40	.....	1	1
18	54 09	168 39	25	53	78
19	54 15	168 10	6	17	23
22	54 18	167 55	3	.....	3
23	54 05	168 05	3	.....	3
24	54 07	168 25	.....	36	36
26	54 15	167 27	2	.....	2
27	54 16	168 50	15	37	52
28	54 17	168 14	6	13	19
29	54 43	167 50	5	20	25
30	54 45	167 49	14	59	73
31	54 44	169 00	2	18	20
Sept. 1	54 25	169 35	35	46	81
2	54 26	168 35	9	18	27
7	54 24	167 25	.....	1	1
8	54 17	168 09	10	2	12
9	54 18	168 15	8	4	12
16	54 58	167 23	.....	1	1
17	55 11	167 39	14	14	28
19	54 32	166 03	5	38	43
20	54 28	165 55	4	21	25
21	54 24	166 05	6	33	39
Total	.....	.....	204	532	736

ositions where fur seals were taken by American and Canadian vessels in Bering Saa and the North Pacific Ocean in 1894—Continued.

AMERICAN SCHOONER COLUMBIA (BERING SEA), T. J. POWERS, MASTER.

[Crew, 24; canoes, 10; hunters, 10; boats, 1.]

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
.ug. 3	55 11	171 10	9	4	13
4	55 17	171 31	26	27	53
5	55 32	173 30	6	9	15
6	56 09	173 30	3	3	6
7	56 30	173 10	7	5	12
8	56 33	172 34	5	10	15
9	56 51	172 28	1	.....	1
10	56 54	172 43	11	16	27
11	57 09	173 19	20	27	47
17	57 01	174 20	3	2	5
19	57 06	174 14	4	8	12
23	57 49	173 50	3	9	12
24	57 49	175 01	2	2	4
28	57 54	175 09	2	1	3
29	57 00	173 52	19	23	42
31	55 46	173 07	1	.....	1
ept. 1	55 25	172 55	3	6	9
2	55 23	172 24	18	25	43
3	54 58	172 26	1	3	4
5	54 28	167 57	19	14	33
9	54 19	167 53	3	5	8
10	30 miles north of Bogoslof Island.		9	15	24
13	54 25	167 30	5	9	14
Total	.....	.....	180	223	403

AMERICAN SCHOONER THERESE (BERING SEA), CHARLES HARITWEN, MASTER.

[Crew, 22; boats, 6; hunters, 6.]

1894.	N.	W.			
.ug. 2	56 11	175 17	.....	1	1
3	56 57	174 15	.....	1	1
4	57 54	174 06	1	3	4
6	58 09	173 38	1	12	13
7	58 22	173 04	1	25	26
8	58 21	173 08	.....	2	2
11	58 02	171 50	2	.....	2
23	55 05	166 45	1	11	12
24	54 52	166 54	.....	37	37
27	54 56	166 24	.....	5	5
28	54 43	166 52	20	31	51
29	54 22	166 52	13	23	36
30	54 22	166 27	10	10	20
ept. 1	54 49	165 59	20	46	66
2	54 47	166 18	6	9	15
3	54 46	166 19	1	.....	1
8	54 50	165 21	1	5	6
9	54 39	166 26	4	15	19
10	54 36	166 26	.....	1	1
Total	.....	.....	81	237	318

AMERICAN SCHOONER ALLIE I. ALGAR (BERING SEA), WESTER, MASTER.

	N.	W.			
.ug. 15	53 49	168 50	1	.....	1
18	54 46	167 43	20	49	69
19	54 46	167 30	10	15	25
22	54 25	167 18	10	13	23
23	54 40	167 50	5	4	9
24	55 12	168 08	3	5	8
27	54 40	168 40	11	16	27
28	54 35	168 20	12	20	32
29	54 50	168 06	23	29	52
30	54 47	167 57	16	20	36
31	54 20	167 19	.....	3	3
ept. 1	55 12	167 36	9	14	23
2	55 13	168 08	2	2	4
5	56 05	167 55	2	4	6
7	55 39	168 14	4	5	9
Total	.....	.....	128	199	327

Positions where fur seals were taken by American and Canadian vessels in Bering Sea and the North Pacific Ocean in 1894—Continued.

AMERICAN SCHOONER ROSE SPARKS (BERING SEA), J. W. TROTT, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Aug. 11	56 42	174 23	1	1	2
15	55 48	172 27	.....	2	2
18	54 42	167 48	5	52	57
19	54 48	167 20	1	2	3
23	54 31	167 15	5	14	19
24	55 26	167 57	1	.....	1
25	55 45	167 47	.....	2	2
28	55 06	167 48	3	18	21
29	54 54	168 10	5	25	30
30	54 48	168 20	5	17	22
31	54 54	167 30	2	2	4
Sept. 1	54 42	167 34	6	20	26
2	54 42	167 25	1	1	2
5	54 31	165 45	1	2	3
6	54 28	165 35	1	2	3
Total	.....	.....	37	160	197

AMERICAN SCHOONER JANE GREY (BERING SEA).

1894.	N.	W.			
Aug. 13	55 20	172 28	1	4	5
15	56 01	175 00	.....	1	1
17	55 56	172 34	1	3	4
18	55 52	173 06	2	8	10
22	54 50	170 32	2	7	9
26	54 28	168 18	1	7	8
27	54 28	168 45	13	17	30
28	54 36	168 24	7	9	16
29	54 32	168 16	5	8	13
30	54 20	167 45	4	7	11
31	54 56	167 32	1	.....	1
Sept. 1	55 30	167 12	2	8	10
2	55 02	165 55	7	13	20
Total	.....	.....	46	92	138

AMERICAN SCHOONER LOUIS OLSEN (BERING SEA), GUILLAMS, MASTER.

1894.	N.	W.			
Aug. 4	57 50	173 56	4	8	12
6	58 30	173 56	4	15	19
7	58 30	173 56	4	30	34
10	58 27	172 46	1	3	4
11	57 42	172 52	3	10	13
18	56 05	172 17	2	.....	2
Total	.....	.....	16	68	84

CANADIAN SCHOONER ROSIE OLSEN (BERING SEA).

1894.	N.	W.			
Aug. 13	57 07	174 42	.....	1	1
16	57 05	174 18	.....	1	1
17	56 47	174 34	3	1	4
18	56 40	174 38	8	12	20
22	56 56	174 42	7	8	15
27	57 47	173 00	2	1	3
28	58 00	173 00	49	68	117
29	57 58	173 17	7	4	11
30	58 01	172 44	2	6	8
Sept. 1	58 01	172 50	20	29	49
2	58 08	173 10	20	49	69
5	57 47	173 20	8	13	21
6	58 09	173 48	18	12	30
7	58 18	173 36	36	40	76

ositions where fur seals were taken by American and Canadian vessels in Bering Sea and the North Pacific Ocean in 1894—Continued.

CANADIAN SCHOONER ROSIE OLSEN (BERING SEA)—Continued.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
ept. 8	58 13	173 39	20	10	30
9	58 11	173 11	24	29	53
10	58 15	173 09	17	12	29
12	57 50	173 09	11	8	19
14	57 56	173 16	58	35	93
16	58 05	173 08	34	28	62
18	57 56	173 22	4	1	5
19	57 47	173 25	76	59	135
20	57 47	173 21	1	4	5
Total			425	431	856

CANADIAN SCHOONER UMBRINA (BERING SEA).

1894.	N.	W.			
ug. 7	57 40	176 45	1		1
9	58 20	172 55		2	2
10	57 53	172 32	2	6	8
18	58 07	172 50	7	15	22
22	53 12	172 00	20	7	27
Total			30	30	60

CANADIAN SCHOONER ARIETIS (BERING SEA).

1894.	N.	W.			
ug. 4	56 26	172 14	7	13	20
5	56 22	172 14		2	2
6	56 02	171 56	2	5	7
7	56 26	172 14	10	16	26
8	56 02	171 56	5	1	6
10	55 38	172 50		3	3
11	55 08	171 07	2	1	3
12	54 08	170	4	1	5
13	54 50	168 33	1		1
15	54 41	166 59	8	10	18
Total			39	52	91

CANADIAN SCHOONER WALTER A. EARLE (BERING SEA).

1894.	N.	W.			
ug. 1	56 00	172 35	1	9	10
3	56 17	172 00		3	3
4	56 13	172 00	15	30	45
6	56 00	172 41	10	25	35
7	57 58	172 26	20	12	32
10	57 10	173 26	16	20	36
18	56 00	172 29	15	32	47
22	56 12	172 15	9	12	21
28	56 27	173 33	26	80	106
29	56 24	173 38		26	26
30	56 52	173 38	2	20	22
ept. 1	56 23	173 48	5	30	35
2	56 43	174 16	8	60	68
5	56 43	173 52	6	16	22
6	56 43	173 52	7	18	25
7	56 19	172 58		20	20
8	56 14	173 00	2	50	52
9	56 21	172 55		14	14
10	55 58	172 54	13	40	53
Total			155	517	672

Positions where fur seals were taken by American and Canadian vessels in Bering Sea and the North Pacific Ocean in 1894—Continued.

CANADIAN SCHOONER FAWN (BERING SEA).

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Aug. 3	56 05	172 02	2	.....	2
4	56 35	172 05	10	4	14
5	57 18	172 40	2	3	5
6	57 35	173 30	3	12	15
7	58 10	173 30	15	16	31
9	58 05	173 23	4	9	13
10	57 50	173 03	14	24	38
11	57 42	172 50	12	3	15
16	55 59	172 17	.....	3	3
18	55 47	172 11	4	27	31
23	55 54	172 12	10	18	28
23	56 21	172 41	4	.....	4
27	55 37	171 17	5	24	29
28	55 36	171 28	12	23	35
29	55 36	171 38	41	18	59
30	55 32	171 42	28	6	34
31	55 38	171 11	14	9	23
Sept. 1	55 00	170 16	18	23	41
2	54 30	170 00	.....	3	3
5	54 52	168 47	31	13	44
6	54 56	168 13	4	.....	4
7	55 19	167 55	24	35	59
9	55 25	168 26	22	27	49
10	55 21	168 36	8	6	14
12	55 13	169 09	.....	6	6
13	55 08	169 21	7	16	23
14	55 00	169 08	7	3	10
15	55 10	169 06	9	5	14
Total	.....	.....	310	336	646

CANADIAN SCHOONER MARY ELLEN (BERING SEA).

1894.	N.	W.			
Aug. 6	57 10	173 20	1	4	5
7	57 16	173 26	1	5	6
8	57 30	173 35	1	4	5
10	56 26	172 59	8	15	23
11	56 26	172 59	4	14	18
22	56 42	173 04	2	8	10
23	56 42	173 04	9	12	21
25	57 04	173 10	.....	2	2
27	57 10	173 12	3	12	15
28	57 10	173 12	11	33	44
29	57 10	173 12	1	7	8
30	57 10	173 12	2	11	13
Sept. 1	57 22	173 16	6	22	28
2	57 22	173 16	8	37	45
5	57 22	173 16	4	18	22
6	57 22	173 16	11	41	52
7	57 46	173 22	10	37	47
8	57 46	173 22	9	44	53
9	57 52	173 27	12	17	29
10	57 52	173 27	2	8	10
Total	.....	.....	105	352	457

CANADIAN SCHOONER VERA (BERING SEA).

1894.	N.	W.			
Aug. 7	56 26	173 17	.....	4	4
8	56 25	173 17	.....	1	1
9	55 57	172 30	1	.....	1
10	55 57	172 30	3	4	7
11	55 50	172 58	6	5	11
13	55 04	172 35	9	1	10
17	54 30	168 30	.....	1	1
18	54 30	167 56	33	80	113
19	54 24	167 46	.....	2	2
22	54 17	167 37	3	1	4
23	54 23	168 03	13	10	23
24	54 30	168 07	12	6	18
Total	.....	.....	80	115	195

Positions where fur seals were taken by American and Canadian vessels in Bering Sea and the North Pacific Ocean in 1894—Continued.

CANADIAN SCHOONER TRIUMPH (BERING SEA).

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Aug. 1	55 33	172 32	28	87	115
2	55 47	171 50	35	78	113
4	56 03	172 50	90	90	180
5	56 53	172 50	4	6	10
6	56 58	173 25	30	15	45
7	56 58	173 30	50	62	112
8	57 06	173 30	5	13	18
9	57 15	173 40	.....	5	5
10	56 29	173 05	30	70	100
11	56 25	173 06	20	36	56
15	55 46	171 59	4	11	15
19	55 30	171 30	15	25	37
22	54 38	168 50	80	63	143
23	54 32	168 25	50	58	108
24	54 30	168 29	38	51	89
25	54 38	168 20	10	12	22
26	54 30	168 12	20	30	50
27	54 40	168 00	70	98	168
28	54 53	167 50	80	98	178
29	54 46	168 40	50	117	167
30	54 54	167 58	42	83	125
31	55 00	168 18	26	35	61
Sept. 1	54 57	168 12	80	244	324
2	55 01	168 29	40	83	123
4	55 04	168 30	7	19	26
5	55 09	168 20	53	90	143
6	55 20	168 55	97	207	304
7	55 18	169 09	17	38	55
8	55 05	169 09	40	87	127
9	55 20	169 08	53	157	210
10	55 20	169 08	2	14	16
Total	.....	.....	1,163	2,077	3,240

CANADIAN SCHOONER SAPPHIRE (BERING SEA).

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Aug. 1	54 58	170 59	53	42	95
2	54 55	171 20	31	38	69
3	55 01	171 16	9	8	17
4	55 50	172 01	41	42	83
5	56 00	171 51	33	13	46
6	57 03	173 59	12	7	19
7	57 03	173 04	18	19	37
8	57 40	173 30	2	4	6
10	56 26	172 42	25	56	81
11	56 16	172 30	25	21	46
13	55 32	171 49	5	13	18
15	55 17	168 48	30	45	75
18	54 50	169 20	21	50	71
19	55 00	168 39	8	20	28
22	54 49	167 43	10	2	12
23	54 46	167 42	66	59	125
24	54 57	167 45	50	33	83
25	55 00	168 06	6	.....	6
26	54 57	168 47	10	6	16
27	54 58	168 45	70	83	153
28	54 39	169 02	41	20	61
29	54 50	169 04	60	26	86
30	54 53	168 09	112	45	157
31	55 09	168 13	8	3	11
Sept. 1	55 13	168 05	110	64	174
2	55 11	168 37	42	25	67
4	55 00	168 48	8	4	12
5	54 57	168 18	98	30	128
6	55 13	168 21	12	4	16
7	55 05	168 03	28	9	37
8	54 50	168 02	3	.....	3
9	54 55	168 01	62	49	111
10	55 09	168 09	1	.....	1
11	54 40	168 40	2	.....	2
13	55 03	168 58	31	11	42
15	54 52	168 23	20	4	24
16	55 09	167 04	4	1	5
17	55 23	167 02	24	16	40
18	55 05	166 11	14	.....	14
19	54 10	164 38	21	7	28
Total	.....	.....	1,226	879	2,105

***Positions where fur seals were taken by American and Canadian vessels in Bering Sea and the North Pacific Ocean in 1894*—Continued.**

CANADIAN SCHOONER AURORA (BERING SEA).

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Aug. 6	56 23	173 40	4	9	13
7	56 30	174 00	10	12	22
8	56 25	173 35	1	22	23
9	56 45	173 35	6	1	7
10	56 12	172 43	20	17	37
11	56 17	173 10	3	10	13
13	56 40	173 22	.....	9	9
15	53 55	170 56	12	22	34
16	54 04	168 00	16	22	38
18	55 28	166 00	3	5	8
19	55 18	166 01	4	8	12
23	53 18	159 00	.....	1	1
Total	.....	.....	79	138	217

CANADIAN SCHOONER BEATRICE, OF SHANGHAI (BERING SEA).

1894.	N.	W.			
Aug. 1	54 49	166 35	3	10	13
3	55 14	170 34	1	6	7
4	54 59	170 16	55	136	191
5	54 53	170 23	10	79	89
7	54 50	170 49	14	72	86
8	54 45	170 44	19	23	42
9	54 25	170 53	11	6	17
10	54 19	171 27	18	6	24
11	54 32	171 49	15	14	29
12	54 54	171 30	2	8	10
15	54 46	170 18	4	6	10
17	55 03	171 06	.....	6	6
18	54 52	171 00	6	48	54
19	54 58	170 53	3	4	7
23	55 12	169 27	1	14	15
25	54 57	171 01	7	13	20
27	54 34	171 34	7	43	50
28	54 32	171 36	2	21	23
29	55 22	171 32	5	16	21
30	55 08	170 40	10	40	50
31	55 01	170 31	3	5	8
Sept. 1	54 41	170 24	30	82	112
2	54 49	170 02	3	3	6
5	54 24	168 41	5	4	9
6	54 57	170 14	6	13	19
8	54 56	167 35	5	11	16
9	54 55	167 28	20	75	95
10	55 08	167 37	3	.....	3
13	54 36	167 14	15	13	28
14	54 37	166 55	12	3	15
15	54 39	167 03	19	20	39
16	54 53	166 44	3	.....	3
17	55 09	167 04	20	16	36
18	54 51	166 42	4	2	6
19	54 22	166 36	1	.....	1
Total	.....	.....	342	818	1,16[illegible]

CANADIAN SCHOONER MASCOT (BERING SEA).

1894.	N.	W.			
Aug. 1	55 06	168 20	18	5	23
2	54 40	167 20	2	4	6
3	54 20	167 10	1	2	3
9	55 34	171 33	2	3	5
10	55 40	171 15	33	22	55
11	56 10	172 00	11	7	18
22	56 05	171 15	12	10	22
28	57 56	173 29	31	26	57
29	57 56	173 29	4	7	11
30	57 50	173 11	5	4	9
Sept. 1	57 47	173 15	16	25	41
2	57 49	173 13	15	35	50
5	58 03	173 46	18	12	30

***Positions where fur seals were taken by American and Canadian vessels in Bering Sea and the North Pacific Ocean in 1894*—Continued.**

CANADIAN SCHOONER MASCOT (BERING SEA)—Continued.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Sept. 6	58 02	174 00	11	11	22
7	58 04	173 50	39	19	58
8	58 14	173 45	21	19	40
9	58 02	173 35	16	4	20
12	58 00	173 35	23	20	43
	(a)	(a)	21	11	32
Total			299	246	1,103

a Canoe lost and picked up by schooner *Wanderer* with 32 skins.

CANADIAN SCHOONER FAVORITE (BERING SEA).

1894.	N.	W.			
Aug. 1	54 40	166 20	98	64	162
2	55 05	168 05		2	2
3	55 13	168 20	49	30	79
4	55 03	168 40	150	67	217
5	55 40	173 00	70	52	122
7	55 40	173 30	60	14	74
8	56 46	173 15	10	13	23
10	56 26	173 20	50	48	98
11	56 26	169 46	25	25	50
15	54 41	169 18	25	22	47
18	54 21	169 10	60	28	88
19	54 25	168 00	39	30	69
22	54 39	168 10	40	24	64
23	54 39	168 10	67	60	127
24	54 38	169 29	9	9	18
Total			752	488	1,240

CANADIAN SCHOONER ANNIE C. MOORE (BERING SEA).

1894.	N.	W.			
Aug. 1	57 50	173 00	24	24	48
2	57 50	172 48	11	13	24
3	57 50	173 00	12	14	26
4	58 00	172 45	40	20	60
5	58 00	173 00	3	5	8
9	57 55	173 00	25	15	40
10	58 00	173 00	95	95	190
11	58 00	173 00	50	66	116
13	58 10	173 10	10	29	39
15	57 50	173 00	10	8	18
16	57 55	173 05	5	4	9
18	55 40	172 00	10	38	48
22	56 45	172 30	50	56	106
23	57 00	172 40	15	20	35
26	57 50	173 04	9	8	17
28	57 56	173 10	112	110	222
29	58 00	173 10	28	31	59
30	58 03	175 00	30	29	59
Sept. 1	57 55	173 15	50	52	102
2	58 05	173 07	70	80	150
5	58 00	173 30	60	70	130
6	58 00	173 30	28	23	51
7	58 03	173 22	100	90	190
8	58 10	173 10	40	48	88
9	58 15	173 20	21	20	41
10	58 20	173 10	30	41	71
Total			938	1,009	1,947

***Positions where fur seals were taken by American and Canadian vessels in Bering Sea and the North Pacific Ocean in 1894*—Continued.**

CANADIAN SCHOONER LABRADOR (BERING SEA).

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Aug. 3	55 05	167 00	3	10	13
4	55 00	167 10	12	70	82
5	54 32	166 20	27	10	37
6	54 40	167 00	10	16	26
8	55 13	166 45	4	14	18
9	55 04	167 25	1	7	8
10	54 50	167 05	20	32	52
12	54 55	167 20	48	100	148
16	54 45	167 24	1	2	3
18	54 40	167 30	33	100	133
19	54 25	167 10	20	20	40
Total			179	381	560

CANADIAN SCHOONER SAUCY LASS (BERING SEA).

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Aug. 6	54 28	166 44	7	9	16
22	54 28	172 13	25	39	64
27	55 08	169 01	6	10	16
28	54 30	168 16	29	25	54
30	54 44	167 42	40	60	100
Sept. 1	55 09	167 33	90	109	199
2	54 56	167 40	7	9	16
5	55 24	166 52	6	10	16
8	54 56	167 49	8	6	14
9	55 07	167 30	20	26	46
10	55 23	167 54	5	7	12
13	54 52	167 40	8	10	18
15	55 05	167 30	25	27	52
16	54 51	167 14	8	12	20
18	54 05	166 40	6	10	16
Total			290	378	668

CANADIAN SCHOONER BOREALIS (BERING SEA).

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Aug. 1	57 36	166 43	.....	3	3
3	56 04	167 22	.....	6	6
4	56 12	167 21	4	28	32
5	56 05	167 22	4	33	37
7	55 33	170 25	2	184	186
8	55 27	170 21	3	25	28
9	55 26	170 14	5	33	38
10	55 27	170 55	6	198	204
11	55 36	171 00	3	38	41
12	55 20	171 00	1	4	5
14	55 26	171 09	.....	1	1
15	55 32	170 36	1	19	20
18	55 27	169 54	4	41	45
19	55 30	170 36	1	1	2
22	55 31	170 04	.....	1	1
23	55 44	171 15	1	2	3
25	56 34	172 20	.....	2	2
27	56 37	172 11	.....	6	6
28	56 50	172 49	6	89	95
29	56 49	172 49	1	26	27
30	56 33	172 33	.....	8	8
Sept. 1	55 30	170 05	4	77	81
4	55 35	168 30	.....	1	1
5	54 59	168 42	9	48	57
6	55 06	168 33	12	74	86
7	55 02	168 10	7	49	56
12	55 20	169 41	16	62	78
Total			90	1,059	1,149

***Positions where fur seals were taken by American and Canadian vessels in Bering Sea and the North Pacific Ocean in 1894*—Continued.**

CANADIAN SCHOONER KATHERINE (BERING SEA).

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Aug. 1	56 05	173 09	2	2	4
2	56 23	172 57	20	13	33
4	56 30	173 17	40	21	61
6	56 35	174 09	3	20	23
7	56 30	173 30	28	31	59
8	56 25	173 10	3	4	7
9	56 27	173 00	5	9	14
10	56 20	172 01	16	100	116
11	56 20	172 10	50	11	61
13	56 25	172 50	1	3	4
16	56 18	173 11	2	8	10
17	56 14	173 15	8	4	12
18	56 16	172 45	9	24	33
19	56 18	172 22	5	12	17
25	56 05	172 16	8	54	62
26	56 30	174 00	1	3	4
27	54 20	168 30	30	4	34
28	54 10	168 25	38	51	89
29	54 16	168 35	6	42	48
30	54 22	167 40	57	37	94
31	54 15	167 45	20	25	45
Sept. 1	54 20	167 30	105	52	157
2	54 40	167 25	13	24	37
3	54 25	167 20	.....	2	2
5	54 35	167 06	20	13	33
Total	.....	.....	490	569	1,059

CANADIAN SCHOONER AINOKO (BERING SEA).

1894.	N.	W.			
Aug. 1	54 56	171 12	8	1	9
2	55 05	171 49	20	6	26
4	55 07	172 44	60	41	101
6	56 42	173 54	13	9	22
7	56 55	173 30	14	13	27
8	56 48	173 34	12	4	16
9	56 50	173 28	5	3	8
10	56 35	173 13	15	12	27
11	56 37	172 40	18	.....	18
17	54 29	168 59	5	.....	5
18	54 30	168 45	42	24	66
19	54 23	169 12	35	6	41
23	55 05	167 31	70	45	115
24	54 47	169 02	25	24	49
25	55 03	168 08	10	6	16
26	54 42	167 42	7	5	12
27	54 35	167 33	62	58	120
28	54 45	168 39	75	43	118
29	54 34	168 19	62	18	80
30	54 57	168 06	61	18	79
31	54 12	168 13	5	12	17
Sept. 1	54 23	168 27	107	65	172
2	54 28	168 43	8	20	28
4	54 31	168 30	1	3	4
5	54 23	168 43	69	26	95
6	55 00	168 35	32	20	52
7	55 05	168 37	14	25	39
8	55 16	168 42	76	10	86
9	55 07	168 06	30	7	37
13	54 53	168 27	10	1	11
14	55 04	168 08	45	10	55
15	55 07	168 01	68	30	98
17	54 27	166 23	8	.....	8
Total	.....	.....	1,092	565	1,657

Positions where fur seals were taken by American and Canadian vessels in Bering Sea and the North Pacific Ocean in 1894—Continued.

CANADIAN SCHOONER KATE (BERING SEA).

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Aug. 3	55 56	167 31	1	5	6
4	56 21	167 28	1	20	21
5	57 37	166 43	1	14	15
7	58 40	167 48	.....	1	1
10	58 03	172 00	4	11	15
11	58 01	172 30	4	7	11
15	55 29	171 14	.....	8	8
18	55 05	170 20	5	38	43
22	54 41	168 50	29	54	83
23	54 37	169 00	36	67	103
25	54 51	167 56	3	3	6
26	54 47	168 42	.....	9	9
27	54 49	169 06	31	62	93
28	54 36	169 24	15	45	60
29	54 31	168 43	1	3	4
30	54 39	168 41	10	44	54
31	54 45	167 59	3	3	6
Sept. 1	54 58	168 03	52	40	92
2	54 29	168 25	8	11	19
4	54 18	167 40	1	1	2
5	54 42	167 37	12	12	24
6	54 45	168 23	.....	2	2
7	55 05	168 56	9	10	19
8	54 32	169 00	15	13	28
9	54 45	168 35	12	19	31
12	54 50	167 37	1	.....	1
13	54 47	167 39	12	15	27
14	54 47	167 39	8	10	18
15	54 41	167 33	25	34	59
16	54 35	165 24	4	3	7
Total	.....	.....	303	564	867

CANADIAN SCHOONER VENTURE (BERING SEA).

1894.	N.	W.			
Aug. 1	54 36	163 37	9	11	20
2	55 02	166 18	.....	1	1
3	55 00	167 11	5	7	12
4	55 24	167 17	21	31	52
5	55 14	167 36	4	6	10
6	55 28	167 14	.....	1	1
7	55 26	168 15	.....	2	2
8	55 12	168 50	1	2	3
11	55 05	169 55	5	6	11
12	54 49	169 55	44	34	78
15	54 38	170 08	6	9	15
18	54 48	169 43	16	13	29
19	54 53	169 46	5	7	12
22	54 23	168 27	47	63	110
23	54 23	168 20	5	13	18
24	54 24	168 05	16	24	40
27	54 33	168 18	19	41	60
28	54 38	168 14	27	42	69
29	54 36	168 18	14	21	35
30	54 31	168 19	13	19	32
31	54 50	168 11	21	17	38
Sept. 1	54 46	168 08	74	87	161
2	54 59	168 01	5	3	8
5	54 43	168 04	12	7	19
7	54 37	167 58	3	1	4
9	54 35	168 12	13	5	18
13	54 49	168 36	5	2	7
14	54 38	168 20	2	1	3
15	54 39	167 51	24	16	40
18	54 26	161 07	1	.....	1
Total	.....	.....	417	492	909

***Positions where fur seals were taken by American and Canadian vessels in Bering Sea and the North Pacific Ocean in 1894*—Continued.**

CANADIAN SCHOONER WALTER L. RICH (BERING SEA).

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Aug. 1	55 05	166 48	1	23	24
3	55 17	166 51	3	7	10
4	55 17	166 51	53	50	103
5	55 10	167 10	10	4	14
6	55 00	166 36	20	5	25
10	55 15	167 44	37	19	56
12	55 11	167 59	96	80	176
15	55 05	167 10	73	6	79
16	55 12	167 20	12	2	14
18	54 56	167 45	143	36	179
19	55 00	167 30	60	4	64
23	54 58	168 20	87	16	103
24	54 40	168 44	12	22	34
25	54 48	168 10	3	25	28
26	54 53	168 00	12	31	43
27	55 05	168 10	3	32	35
28	54 35	168 10	30	75	105
29	54 35	168 15	40	45	85
30	54 42	167 45	32	14	46
31	54 36	168 34	60	34	94
Sept. 1	54 40	167 50	133	145	278
2	54 40	168 22	21	9	30
5	54 50	166 54	53	60	113
6	54 40	166 25	6	5	11
Total			1,000	749	1,749

CANADIAN SCHOONER MINNIE (BERING SEA).

1894.	N.	W.			
Aug. 1	54 48	165 51	20	45	65
3	54 37	165 31	2	1	3
4	55 12	165 07	16	28	44
5	55 28	166 29	.....	1	1
6	55 03	166 44	18	23	41
7	54 50	166 30	21	55	76
8	54 55	166 31	7	6	13
10	54 43	166 14	.....	1	1
11	54 44	165 29	31	41	72
12	54 51	165 30	24	63	87
15	54 23	168 30	12	27	39
16	54 52	168 24	.....	1	1
17	54 47	168 13	.....	1	1
18	54 54	168 00	47	114	161
19	54 53	168 07	12	44	56
22	54 31	167 39	4	14	18
23	54 48	167 34	15	58	73
24	55 09	168 00	18	50	68
25	54 59	168 23	.....	1	1
26	54 39	168 03	14	3	17
27	55 05	167 42	33	20	53
28	55 04	167 39	81	60	141
29	54 55	167 35	103	90	193
30	54 54	167 49	58	30	88
31	55 06	167 55	10	12	22
Sept. 1	55 09	167 36	76	116	192
2	55 16	167 51	12	9	21
7	55 20	168 00	10	15	25
8	55 14	167 41	8	10	18
9	55 02	167 30	6	11	17
10	55 52	167 25	1	2	3
12	55 08	167 22	1	.....	1
13	55 07	167 19	14	20	34
15	55 02	168 08	5	9	14
a)	.....	.....	.....	5	5
Total			679	986	1,665

a Boat of schooner *Minnie* picked up by schooner *Favorite* with 5 skins.

***Positions where fur seals were taken by American and Canadian vessels in Bering Sea and the North Pacific Ocean in 1894*—Continued.**

CANADIAN SCHOONER SAN JOSE (BERING SEA).

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Aug. 3	54 54	166 28	2	2	4
4	54 54	166 28	10	74	84
5	55 01	167 05	8	15	23
6	55 01	167 23	12	20	32
8	55 12	168 15	4	5	9
10	55 04	169 04	2	1	3
11	55 02	170 37	2	1	3
12	55 13	170 55	3	2	5
18	55 11	168 10	8	3	11
19	54 25	166 34	30	13	43
23	54 56	166 44	15	8	23
24	54 54	167 33	13	4	17
25	55 29	168 00	.....	1	1
26	55 10	166 54	.....	2	2
27	54 57	167 13	.....	26	26
28	54 55	167 30	3	40	43
29	55 01	167 11	6	20	26
30	55 04	167 50	14	40	54
31	54 57	168 06	4	9	13
Sept. 1	55 11	168 36	7	50	57
2	55 13	168 36	9	20	29
4	55 17	168 10	4	9	13
5	55 15	168 55	20	50	70
6	55 15	169 20	43	80	123
7	55 14	169 24	1	2	3
8	55 00	169 00	10	20	30
9	55 05	168 10	14	40	54
10	55 16	168 25	3	7	10
11	54 48	169 03	1	2	3
13	54 35	166 36	4	18	22
15	54 28	166 00	4	9	13
Total	.....	.....	256	503	759

CANADIAN SCHOONER KILMENY (BERING SEA).

1894.	N.	W.			
Aug. 6	55 30	165 00	8	11	19
8	55 00	166 00	7	2	9
9	55 10	165 00	1	.....	1
10	55 00	167 00	6	7	13
11	55 55	166 30	2	.....	2
13	55 30	167 00	50	43	93
18	55 12	167 00	2	3	5
20	55 10	167 40	50	59	109
22	55 00	167 00	10	11	21
23	55 00	165 00	4	4	8
24	55 10	166 00	20	15	35
25	54 40	166 25	4	8	12
28	54 20	168 20	4	2	6
29	54 40	167 00	53	43	96
30	54 50	167 20	4	40	44
31	54 30	167 40	4	10	14
Sept. 1	54 30	167 30	40	34	74
2	54 35	167 28	29	9	38
7	54 40	167 15	1	4	5
8	54 10	167 15	3	6	9
9	54 35	167 20	3	10	13
10	54 40	167 05	.....	2	2
13	54 00	166 03	1	2	3
15	53 15	165 10	1	2	3
Total	.....	.....	307	327	634

Positions where fur seals were taken by American and Canadian vessels in Bering Sea and the North Pacific Ocean in 1894—Continued.

CANADIAN SCHOONER HENRIETTA (BERING SEA).

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
ug. 18	54 50	166 20	8	15	23
19	55 00	166 30	15	24	39
24	55 46	166 30	18	21	39
28	54 40	168 46	12	11	23
29	54 16	169 19	100	20	120
30	54 05	169 27	21	5	26
31	54 47	169 16	12	15	27
pt. 1	54 57	168 53	120	65	185
2	54 56	169 10	40	21	61
5	55 02	168 52	20	31	51
6	55 15	168 40	10	32	42
7	55 00	169 36	3	4	7
8	55 05	169 34	3	9	12
9	55 10	168 56	20	33	53
15	54 40	167 00	25	34	59
Total			427	340	767

CANADIAN SCHOONER SHELBY (BERING SEA).

1894.	N.	W.			
ug. 7	54 40	167 32	4	4	8
8	54 50	168 14	3	2	5
10	55 14	170 32	27	28	55
11	55 20	170 44	3	1	4
13	55 41	171 50	2	3	5
15	55 38	171 07	1	2	3
18	55 52	172 35	2	5	7
22	55 05	171 54	7	2	9
26	56 32	171 55	.....	1	1
27	56 10	172 58	10	3	13
28	56 20	172 02	24	11	35
29	56 19	170 03	4	.....	4
31	55 28	170 59	4	3	7
ept. 1	55 19	170 38	10	4	14
2	55 14	170 31	16	6	22
5	55 32	169 46	2	1	3
6	55 32	170 37	17	14	31
7	55 23	170 34	4	3	7
8	55 06	170 30	30	26	56
9	55 13	170 18	28	15	43
17	55 32	169 14	16	3	19
19	55 28	170 11	13	3	16
20	55 21	170 07	5	5	10
Total			232	145	377

Positions where fur seals were taken in 1894 off the Japan coast by Canadian and American vessels.

[Data collected by C. H. Townsend and A. B. Alexander.]

CANADIAN SCHOONER UMBRINA (JAPAN COAST), CAMPBELL, MASTER.

Date.	Latitude.	Longitude.	Seals.
1893.	N.	W.	
Dec. 28	42 40	141 00	31
29	43 40	142 60	
1894.			
Jan. 1	41 24	150 00	
5	40 19	146 10	
15	39 06	173 55	
		E.	
Mar. 17	37 20	145 04	17
18	37 13	143 04	5
19	37 30	144 37	1
21	37 05	146 40	90
22	37 12	146 20	11
23	37 16	146 27	67
24	37 10	145 15	90
25	37 20	145 35	60
26	37 40	146 19	56
Apr. 1	37 40	146 07	79
2	37 25	146 00	135
3	37 15	145 38	88
4	37 20	142 20	48
5	37 10	.....	.....
6	37 20	145 40	42
7	37 17	145 26	103
8	37 35	145 33	41
11	37 24	145 40	18
12	37 27	146 05	57
13	37 20	146 00	74
16	37 30	146 08	23
17	37 12	145 50	1
18	37 14	145 45	15
19	37 19	146 00	91
20	37 16	146 03	33
22	36 55	145 50	58
23	37 06	145 45	33

Date.	Latitude.	Longitude.	Seals.
1894—Continued.	N.	E.	
Apr. 26	36 40	146 25	[illegible]
27	36 48	146 ..	[illegible]
28	36 50	(a)	[illegible]
29	37 34	146 23	[illegible]
30	37 35	145 55	[illegible]
May 1	36 56	145 55	[illegible]
8	36 40	145 47	[illegible]
12	37 40	146 50	[illegible]
14	37 49	146 58	[illegible]
15	37 51	147 26	[illegible]
18	37 16	145 00	[illegible]
21	38 11	146 35	[illegible]
22	38 22	146 25	[illegible]
23	38 37	146 10	[illegible]
24	38 36	146 20	[illegible]
26	40 11	144 46	[illegible]
28	41 50	144 12	[illegible]
29	41 35	145 00	[illegible]
31	43 03	147 30	[illegible]
June 5	41 23	145 40	[illegible]
6	40 55	145 56	[illegible]
7	.. 29	146 10	[illegible]
8	40 37	146 02	[illegible]
9	40 45	145 50	[illegible]
10	40 46	145 52	[illegible]
12	40 30	145 41	[illegible]
13	40 40	146 00	.....
14	41 09	145 37	[illegible]
15	41 02	145 55	
16	40 00	145 55	
17	41 57	146 08	[illegible]
18	43 10	147 12	[illegible]
19	43 41	147 30	[illegible]
21	43 45	147 05	
22	43 40	147 10	

a No observation.

AMERICAN SCHOONER EDWARD E. WEBSTER (JAPAN COAST), McLEAN, MASTE

1894.	N.	E.	
Jan. 29	37 46	146 15	29
Feb. 2	38 00	144 40	30
5	36 35	145 00	17
17	38 30	146 00	61
24	36 30	145 46	27
Mar. 5	37 32	144 35	25
15	38 01	146 16	31
19	38 10	145 30	36
21	38 00	146 10	47
23	37 20	145 27	65
24	37 20	145 30	57
26	38 31	146 18	28
Apr. 1	37 11	145 21	61
2	37 07	145 35	58
3	37 02	145 25	40
4	37 06	145 20	17
5	36 56	145 40	29
8	37 15	146 10	33
10	38 00	146 03	26
11	39 10	145 51	47
12	39 10	145 51	73

1894.	N.	E.	
Apr. 16	40 00	144 20	
18	37 40	145 25	
19	37 40	145 07	[illegible]
22	36 57	145 00	
26	36 44	144 33	[illegible]
May 23	40 00	144 00	
24	40 10	144 08	
30	39 52	143 30	
June 1	41 04	142 20	
3	41 42	142 30	
6 *a*	.....	.....	
8	41 14	143 18	
10	41 10	143 15	
13	41 24	142 36	
		W.	
28	42 02	179 02	
29	42 04	178 15	
July 1	42 12	177 20	
2	43 30	177 00	
8	42 56	175 15	
9	43 15	174 44	

a Cape Yerimo east 25 miles.

'ositions where fur seals were taken in 1894 off the Japan coast by Canadian and American vessels—Continued.

AMERICAN SCHOONER ALLIE I. ALGAR (JAPAN COAST), WESTER, MASTER.

Date.	Latitude.	Longitude.	Seals.	Date.	Latitude.	Longitude.	Seals.
1894.	N.	E.		1894.	N.	E.	
Mar. 23	39 22	144 23	8	May 12	41 57	143 08	17
24	39 45	142 57	37	13	42 05	142 38	28
26	40 00	144 00	23	14	41 35	142 40	31
29	39 12	143 13	2	21	42 50	143 50	6
31	40 00	144 00	36	24	42 35	144 56	50
Apr. 1	39 54	144 17	17	25	(a)	(a)	8
3	39 15	144 06	78	26	(a)	(a)	30
4	39 25	144 24	32	29	(a)	(a)	7
6	39 28	143 31	16	June 1	(a)	(a)	34
8	39 25	143 10	47	6	43 16	147 00	12
18	39 29	142 54	38	7	(a)	(a)	24
23	39 27	142 21	10	8	(a)	(a)	32
24	39 51	142 00	3	9	(b)	(b)	102
25	40 15	142 23	29	10	(b)	(b)	22
26	40 13	143 00	40	12	(b)	(b)	67
27	(a)	(a)	2	18	(b)	(b)	20
30	40 03	143 06	26	19	(b)	(b)	19
May 2	(a)	(a)	45	July 23	53 48	167 32	2
3	(a)	(a)	11	24	53 57	168 56	6
7	41 39	142 05	47	25	55 02	169 59	8
11	41 36	143 20	25	26	55 36	169 13	4

a No position. *b* Ten miles off Scoutan Island.

AMERICAN SCHOONER LOUIS OLSEN (JAPAN COAST), GUILLAMS, MASTER.

1894.	N.	E.		1894.	N.	E.	
Mar. 12	36 26	145 23	1	May 16	40 55	142 58	3
13	36 17	145 43	7	17	41 45	143 35	35
15	36 23	147 41	67	19	41 37	143 03	65
17	38 36	147 52	14	20	41 57	142 27	19
19	37 40	146 15	42	21	(a)	(a)	50
21	37 47	144 22	6	24	41 00	143 00	30
Apr. 1	38 16	146 46	54	25	41 47	142 28	3
2	38 22	147 39	50	28	42 38	142 54	7
3	39 20	146 05	15	30	42 42	144 58	15
4	38 59	146 46	8	31	42 38	144 38	63
5	38 34	145 47	39	June 1	42 46	145 03	35
6	38 20	145 50	30	2	42 38	143 57	10
8	38 08	144 52	24	3	42 37	144 06	5
12	40 13	144 18	10	4	42 22	144 30	10
18	37 06	145 56	5	5	42 52	144 53	3
19	37 02	146 03	53	6	42 59	144 57	12
20	37 30	146 20	28	7	42 55	145 28	12
22	37 08	146 39	8	8	42 42	145 56	11
23	37 18	146 03	33	9	42 37	145 59	33
26	36 15	146 26	60	10	42 56	146 08	2
28	36 41	146 09	8				
29	37 14	146 15	5	Total			*b* 1,055
30	37 01	146 05	29				
May 1	35 54	144 43	36				

a Cape Yerimo SE. by E. 28 miles.
b Fifty-seven seals additional belong to the catch; they were taken by the boats that went astray nd were picked up by the *Penelope*, making the total catch 1,112.

Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895.

[From official sources.]

AMERICAN SCHOONER J. EPPINGER (BERING SEA), MICHAEL WHITE, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Aug. 1	54 55	167 47	6	5	11
2	55 07	167 27	3	5	8
4	54 58	167 16	1	3	4
9	54 59	167 40	1	.....	1
10	54 40	167 30	8	42	50
11	54 46	167 46	13	48	61
12	54 54	167 47	1	3	4
14	55 17	168 00	1	4	5
15	54 55	168 01	12	23	35
16	54 35	168 35	.....	1	1
17	54 38	168 40	13	22	35
18	54 35	168 35	.....	2	2
19	54 30	168 30	.....	1	1
20	54 46	167 52	8	27	35
21	54 46	167 52	7	16	23
22	54 17	167 51	7	16	23
24	55 23	169 00	2	3	5
25	55 07	173 40	10	22	32
26	56 08	173 50	5	11	16
27	57 04	173 03	7	10	17
28	56 44	173 25	.....	1	1
Sept. 1	56 40	172 40	4	25	29
2	56 33	172 32	4	41	45
8	56 18	175 10	.....	2	2
			113	333	446
9	56 50	174 22	.....	5	5
15	54 20	169 35	.....	1	1
Total	.....	.....	113	339	452

AMERICAN SCHOONER HERMAN (JAPAN COAST AND BERING SEA), SCOTT, MASTER.

1895.	N.	E.			
Mar. 20	a 36 47	145 26	.....	.....	1
21	36 45	145 40	.....	.....	4
27	36 40	145 05	.....	.....	1
Apr. 1	36 44	146 20	.....	.....	40
2	36 39	146 06	.....	.....	26
3	b 36 44	145 50	.....	.....	2
5	b 36 40	146 24	.....	.....	4
11	b 38 38	146 17	.....	.....	1
12	39 02	146 14	.....	.....	7
13	38 48	146 32	.....	.....	13
15	38 06	146 35	.....	.....	9
16	37 30	146 28	.....	.....	21
18	37 28	146 52	.....	.....	5
19	37 30	146 35	.....	.....	7
23	39 27	143 02	.....	.....	1
25	39 25	142 51	.....	.....	5
26	39 22	142 45	.....	.....	4
27	39 23	142 25	.....	.....	5
28	39 31	142 21	.....	.....	66
29	39 27	142 40	.....	.....	3
30	39 36	142 30	.....	.....	11
May 1	39 26	142 31	.....	.....	17
3	40 22	142 28	.....	.....	7
4	40 31	142 16	.....	.....	38
5	40 38	142 31	.....	.....	9
6	40 59	141 56	.....	.....	19
7	40 54	141 47	.....	.....	23
8	41 12	142 00	.....	.....	2
9	Cruising from 20 to 40 miles E. off Cape Yesan.		.....	.....	5
10	Cape Yesan W. about 20 miles.		.....	.....	11
12	41 53	142 18	.....	.....	10
13	42 13	141 26	.....	.....	10
14	41 48	142 25	.....	.....	23
15	42 07	142 40	.....	.....	13
16	41 51	142 31	.....	.....	1

a Observation. b Dead reckoning.

ositions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

MERICAN SCHOONER HERMAN (JAPAN COAST AND BERING SEA), SCOTT, MASTER—Continued.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	E.			
ay 17	Cape Yerimo N. 20 miles.				1
20	41 49	142 27			29
23	41 58	142 07			19
24	41 50	142 20			29
25	Cape Yerimo ENE. ½ E.				13
26	Distance 80 miles.				9
une 1	Shotan NW. 15 miles.				2
2	Shotan NNE. 10 miles.				14
7	W. end of Yetorufie Island NW. 25 miles.				16
8	do				8
10	S. side west end W. 25 miles.				23
12	10 miles S. of Jap Bay, Yetorufie.				1
13	44 57	147 51			13
14	W. end Yetorufie Island NW. 25 miles.				2
15	W. end Yetorufie Island NNW. 35 miles.				7
16	Otter Island N. 6 miles, S. of Yetorufie.				1
17	Otter Island N. 10 miles.				5
18	W. end of Yetorufie NNW. 12 miles.				6
23	45 19	149 27			1
	N.	W.			
ug. 1	56 07	167 15		10	10
2	56 10	166 25	4	10	14
10	55 45	164 51		1	1
12	56 19	165 10		4	4
14	55 19	168 11		1	1
15	55 08	168 47	6	14	20
17	56 45	172 48	1	11	12
18	56 37	173 43		4	4
19	57 18	173 29	1	5	6
20	57 18	173 30		11	11
21	56 27	173 43		2	2
22	55 55	173 21	8	28	36
23	56 03	173 21	7	14	21
25	55 56	173 23	9	19	28
26	55 54	173 45	14	17	31
27	56 02	173 35	16	53	69
28	56 12	173 32	1	9	10
31	56 56	172 50	5	8	13
ept. 1	55 56	172 35	22	60	82
2	55 49	172 55	4	12	16
8	56 42	173 41	1	3	4
9	56 16	173 37	3	31	34
13	57 44	172 39	1		1
Total			103	327	1,067

MERICAN SCHOONER EDWARD E. WEBSTER (JAPAN COAST AND BERING SEA), A. C. FOLGER, MASTER.

1895.	N.	E.			
Iar. 20	a37 22	141 55			15
21	37 34	142 04			100
22	37 17	141 45			14
24	37 38	143 02			1
pr. 3	38 46	145 00			10
4	39 06	143 53			11
8	39 10	142 31			21
10	39 08	142 20			12
11	38 53	142 26			21

a Observation.

Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER EDWARD E. WEBSTER (JAPAN COAST AND BERING SEA), A. C. FOLGER, MASTER—Continued.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	E.			
Apr. 14	38 50	142 30			1
19	39 48	142 32			15
20	39 47	142 39			1
22	39 37	143 26			1
23	39 24	(a)			5
27	39 49	142 32			28
28	39 50	142 17			44
30	39 45	142 24			4
May 2	41 26	143 02			10
3	41 50	142 53			3
4	41 53	142 02			15
5	42 18	141 24			8
6	41 14	141 20			34
7	42 11	141 18			34
8	42 20	141 16			6
10	42 16	141 05			19
12	42 27	(a)			12
13	42 09	141 00			8
14	(a)	(a)			23
15	41 47	143 05			28
23	43 04	146 55			13
24	43 18	146 51			18
25	43 24	146 24			41
26	43 26	146 23			4
31	43 26	146 23			4
June 1	43 28	146 50			3
2	43 50	147 02			9
6	44 10	147 10			27
7	(a)	(a)			29
8	(a)	(a)			18
10	(a)	(a)			25
13	44 20	147 30			9
14	(a)	(a)			9
15	(a)	(a)			15
18	44 12	147 15			9
19	(a)	(a)			5
	N.	W.			
Aug. 9	b55 10	171 35		3	3
10	55 30	171 30	2	13	15
11	c54 56	171 40	6	21	27
12	c55 13	171 15	3	17	20
15	c56 01	171 45	3	22	25
17	c55 08	171 01	9	15	24
18	c55 08	170 30	1	2	6
20	c55 25	169 10	13	50	63
21	c55 27	169 36	12	24	33
22	c55 16	169 59	4	16	20
24	c54 56	168 00	2	4	6
26	c54 57	168 55	2	6	8
27	c54 54	168 55	3	6	9
28	c55 54	168 56	2	2	4
Sept. 1	c54 50	168 00	3	4	7
8	c47 47	165 18	1		1
Total			66	205	1,037

a Not noted on log. b Dead reckoning. c Observation.

AMERICAN SCHOONER ALTON (JAPAN COAST AND BERING SEA), A. J. ANDERSON, MASTER.

1895.	N.	E.			
Mar. 26	36 40	141 23			6
27	37 07	141 54			1
29	37 50	144 00			1
30	38 59	144 00			3
Apr. 2	38 55	144 57			14
7	41 40	143 28			1
10	41 18	141 52			1
11	40 14	142 51			29

'ositions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

ıMERICAN SCHOONER ALTON (JAPAN COAST AND BERING SEA), A. J. ANDERSON, MASTER—Continued.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1885.	N.	E.			
ıpr. 12	39 53	143 07	.....	.....	40
15	39 33	142 45	.....	.....	5
17	39 55	143 5	.....	.....	1
18	39 42	143 40	.....	.....	31
19	39 56	144 00	.....	.....	16
20	39 34	143 00	.....	.....	12
22	39 47	143 05	.....	.....	19
ſay 1	39 06	143 00	.....	.....	3
3	40 14	142 49	.....	.....	6
4	40 24	142 52	.....	.....	56
5	40 13	142 48	.....	.....	20
6	40 30	142 17	.....	.....	9
7	40 89	142 50	.....	.....	6
9	41 50	142 15	.....	.....	4
10	41 33	143 00	.....	.....	16
15	42 13	145 41	.....	.....	3
16	42 26	144 00	.....	.....	1
19	40 14	142 49	.....	.....	1
20	40 22	142 56	.....	.....	3
une 10	41 30	142 16	.....	.....	4
11	41 36	142 51	.....	.....	3
15	43 00	145 40	.....	.....	2
18	42 03	147 04	.....	.....	3
28	42 47	166 00	.....	.....	1
ıly 2	43 58	174 16	.....	.....	1
6	23 01	178 48	.....	.....	1
7	42 40	179 10	.....	.....	1
.ug. 3	55 01	178 44	1	.....	1
		W.			
10	55 15	167 40	.....	1	1
11	55 04	167 36	.....	1	1
12	55 07	167 46	.....	1	1
14	55 32	169 03	.....	2	2
15	55 11	169 40	5	6	11
17	55 23	169 47	3	15	18
18	55 22	170 24	.....	1	1
20	55 31	170 43	3	9	12
21	55 13	171 14	4	9	13
22	55 24	170 55	5	10	15
24	55 25	170 46	1	.....	1
26	55 07	169 26	6	7	13
27	55 01	169 15	7	14	21
28	54 55	169 00	1	1	2
31	55 16	169 38	1	3	4
ept. 1	55 20	169 37	6	16	22
2	55 21	170 00	2	2	4
Total	.....	.....	45	98	458

ıMERICAN SCHOONER MATTIE T. DYER (JAPAN COAST), C. E. MOCKLER, MASTER.

Date.	Latitude.	Longitude.	Seals.	Date.	Latitude.	Longitude.	Seals.
1895.	N.	E.		1895.	N.	E.	
ıug. 7	54 00	166 00	12	Aug. 27	54 34	164 40	48
8	53 40	166 04	10	30	54 20	163 30	7
9	53 38	166 14	1	31	54 30	163 40	14
10	55 12	164 10	2	Sept. 2	55 45	(b)	1
16	53 43	170 10	1	3	55 45	163 50	3
17	(a)	(a)	4	4	54 38	163 20	13
20	53 28	165 47	8	8	(a)	(a)	2
21	54 18	165 47	5	9	54 38	162 30	1
23	54 20	165 10	12				
24	54 37	164 10	1	Total	.....	.....	149
26	54 16	164 10	4				

a No observation. b No longitude.

Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER EMMA AND LOUISA (BERING SEA), A. McLEAN, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Date.	Latitude.	Longitude.	Males.	Females.
1895.	N.	W.			1895.	N.	W.		
Aug. 8....	55 08	171 14	.....	3	Aug. 25...	55 47	173 00	2	8
10....	55 48	171 48	.....	7	26...	55 44	173 15	18	35
11....	56 30	172 18	3	16	27...	55 50	173 15	22	29
12....	56 12	172 55	4	29	28...	55 59	173 10	14	9
14....	56 20	173 01	1	4	Sept. 1...	57 27	172 56	2	[illegible]
15....	56 07	173 00	3	20	2...	57 00	172 48	2	28
16....	56 15	173 20	.....	1	3...	57 00	173 00	.....	11
17....	56 17	173 30	2	22	8...	56 50	174 03	2	8
18....	56 06	173 37	1	12	9...	57 21	173 00	.....	3
19....	56 02	173 12	3	21	10...	57 12	173 07	2	13
20....	56 12	172 48	9	40	13...	56 59	173 03	2	2
21....	56 00	173 04	1	19	18...	54 09	167 15	5	4
22....	56 06	173 16	6	33					
23....	56 10	173 30	4	19	Total.	.....	.....	108	[illegible]

AMERICAN SCHOONER BONANZA (JAPAN COAST), GEORGE WESTER, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total
1895.	N.	E.			
Mar. 30	a 39 27	146 22	.....	.....	11
Apr. 2	38 33	144 20	.....	.....	5
3	39 26	142 40	.....	.....	7
5	b 39 29	142 07	.....	.....	5
13	a 37 26	145 01	.....	.....	27
16	37 15	145 44	.....	.....	26
18	36 41	145 08	.....	.....	16
19	36 30	145 01	.....	.....	13
23	b 39 48	142 40	.....	.....	6
25	a 39 28	142 37	.....	.....	10
26	39 28	142 38	.....	.....	2
27	39 48	142 48	.....	.....	41
28	30 48	142 14	.....	.....	56
30	b 39 36	142 16	.....	.....	1
May 1	a 39 16	142 21	.....	.....	38
3	40 56	142 08	.....	.....	23
4	41 07	142 16	.....	.....	124
5	41 07	141 58	.....	.....	41
6	41 21	141 58	.....	.....	61
7	41 42	142 10	.....	.....	42
8	41 34	141 54	.....	.....	9
9	b 41 31	141 36	.....	.....	5
10	.....	.....	.....	.....	26
12	a 42 07	142 02	.....	.....	19
13	42 [illegible]	141 59	.....	.....	63
14	41 52	142 08	.....	.....	40
15	41 49	142 27	.....	.....	26
17	.....	.....	.....	.....	9
23	a 42 33	145 53	.....	.....	11
24	42 42	145 47	.....	.....	19
25	42 42	145 46	.....	.....	57
26	42 48	145 34	.....	.....	2
27	42 58	145 30	.....	.....	2
28	42 58	145 59	.....	.....	1
30	42 32	146 35	.....	.....	3
31	43 11	147 30	.....	.....	5
June 2	43 05	146 32	.....	.....	8
5	43 38	146 58	.....	.....	2
6	43 31	146 50	.....	.....	13
7	b 43 43	147 04	.....	.....	10
8	.....	.....	.....	.....	1
10	a 43 23	146 42	.....	.....	2
14	b 43 50	147 10	.....	.....	9
16	.....	.....	.....	.....	2
17	b 43 43	146 52	.....	.....	9
18	a 44 01	147 51	.....	.....	17
Aug. 9	57 20	172 54	.....	3	3
10	57 40	172 47	2	2	4
12	b 57 38	172 47	1	2	3
14	a 55 18	170 40	2	6	8
15	55 26	170 13	4	48	52
17	55 17	170 32	17	38	55
20	55 06	169 47	1	10	11

a Observation. b Dead reckoning.

'ositions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

.MERICAN SCHOONER BONANZA (JAPAN COAST), GEORGE WESTER, MASTER—Cont'd.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	E.			
ug. 21	54 55	170 30	5	5	10
22	a 55 06	169 50	2	17	19
27	b 54 32	168 03	3	2	5
28	54 44	167 54	7	1	8
29	55 20	170 30	.....	1	1
31	55 15	169 23	6	12	18
ept. 1	55 15	169 24	33	34	67
2	55 14	169 41	6	6	12
7	55 28	171 31	1	1	2
8	55 34	171 51	2	4	6
9	54 46	171 07	.....	1	1
10	55 05	170 50	.....	3	3
11	a 55 00	169 50	1	.....	1
Total	.....	.....	93	196	1,215

a Dead reckoning. b Observation.

AMERICAN SCHOONER BOWHEAD (JAPAN COAST), W. P. NOYES, MASTER.

1895.	N.	W.			
an. 14	36 14	123 44	.....	18	18
		E.			
ar. 25	36 48	146 01	1	9	10
27	36 40	145 50	3	11	14
30	36 42	145 10	.....	2	2
pr. 1	36 21	145 48	3	24	27
2	36 20	146 01	10	46	56
3	36 20	145 43	6	17	23
5	36 37	146 00	2	6	8
6	36 05	145 36	4	12	16
9	37 11	146 28	1	1	2
12	37 01	146 09	1	.....	1
13	37 12	146 08	8	27	35
15	37 17	146 31	7	23	30
16	39 09	146 40	8	7	15
17	39 26	146 34	1	1	2
18	39 40	147 17	5	7	12
19	39 38	147 22	11	14	25
20	39 50	147 25	1	3	4
21	39 57	148 08	.....	1	1
22	39 40	148 40	3	3	6
23	40 12	148 30	16	22	38
26	40 10	148 35	3	5	8
28	39 58	148 30	8	14	22
ay 1	39 48	148 02	42	54	96
4	40 00	148 15	2	2	4
5	40 20	148 18	10	14	24
6	40 10	148 12	17	26	43
7	40 12	148 12	8	4	12
8	40 01	148 34	11	10	21
9	40 08	147 53	7	.....	7
11	40 18	148 30	2	.....	2
13	40 39	148 40	2	1	3
16	40 26	146 48	3	1	4
20	41 00	146 44	1	.....	1
24	42 16	145 50	5	2	7
25	42 45	145 36	8	14	22
26	42 50	145 50	.....	1	1
27	42 53	145 30	1	.....	1
30	42 28	145 50	3	1	4
31	42 45	145 35	4	2	6
une 2	43 10	145 55	9	1	10
5	43 15	146 22	5	6	11
6	42 56	146 06	2	2	4
7	43 00	146 05	1	.....	1
15	43 35	147 10	1	1	2
17	43 37	147 15	.....	1	1
18	43 56	147 58	16	5	21
uly 6	43 53	173 25	1	.....	1
Total	.....	.....	263	421	684

Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER WINCHESTER (JAPAN COAST), FRANK JOHNSON, MASTER.

Date.	Latitude.	Longitude.	Seals.
1894.	N.	W.	
Dec. 13	36 59	123 55	8
14	37 06	123 30	8
16	37 15	123 43	9
18	38 00	123 37	16
19	38 00	123 20	7
22	38 24	123 49	11
23	38 33	123 50	47
24	38 31	124 10	11
29	37 55	123 32	9
30	38 08	123 13	4
31	38 15	123 50	8
1895.			
Jan. 1	38 03	123 24	1
5	37 45	123 31	3
6	37 36	123 21	27
9	37 34	122 51	1
10	36 53	123 53	45
11	36 43	123 46	17
		E.	
Mar. 21	36 22	144 30	52
24	36 14	147 00	9
27	36 21	145 06	16
30	36 15	145 33	1
Apr. 1	36 30	146 10	33
2	36 39	146 02	25
3	36 25	145 49	38
5	36 25	145 49	16
6	36 26	146 25	7
15	39 38	142 29	18
16	39 15	142 46	18
17	40 04	142 56	4
18	40 06	143 00	13
19	39 55	143 25	44
23	40 37	143 42	8
26	42 22	145 02	1
27	42 37	144 40	2
May 4	42 25	144 30	9
5	42 00	145 24	1
6	41 11	146 10	13
8	39 46	143 52	8
1895—Continued.	N.	E.	
May 9	39 39	146 20	[illegible]
10	39 37	146 49	[illegible]
12	39 32	146 13	[illegible]
13	40 00	147 08	11
14	39 54	147 13	3
15	39 53	147 41	6
16	40 12	146 30	4
20	40 44	147 19	5
25	42 29	147 21	[illegible]
30	40 09	146 45	4
June 1	43 15	147 00	1
2	43 20	147 26	11
5	42 59	147 40	3
6	43 33	147 49	5
7	43 43	147 27	19
8	43 57	147 07	6
9	43 47	147 16	1
10	43 40	147 03	4
13	43 30	148 19	[illegible]
14	43 37	148 14	[illegible]
15	43 29	147 51	1
17	43 29	147 12	19
18	43 40	147 40	5
19	43 30	148 16	6
30	49 30	158 52	1
July 5	52 37	165 38	2
7	52 58	166 52	1
14	53 40	168 33	4
16	53 48	168 10	29
21	53 09	168 22	11
22	53 45	168 16	4
25	53 51	168 36	2
28	53 24	167 36	8
29	53 27	168 07	10
30	53 25	168 32	11
31	53 58	168 28	1
Aug. 1	53 27	168 56	9
2	53 30	168 20	9
5	53 16	168 50	1
Total			[illegible]

AMERICAN SCHOONER SOPHIA SUTHERLAND (JAPAN COAST), A. C. SUTHERLAND, MASTER.

1895.	N.	E.	
Mar. 9	36 16	144 36	1
13	36 53	141 46	3
21	36 26	144 45	54
24	38 13	142 27	12
30	39 27	143 28	6
Apr. 2	38 01	145 53	21
6	38 05	143 51	1
7	38 37	142 53	2
8	39 42	142 49	3
11	38 01	145 43	7
12	37 33	145 05	13
13	37 27	145 29	11
15	37 50	145 03	1
16	38 47	145 50	3
18	39 15	145 01	1
19	38 44	145 37	6
22	39 20	144 56	1
23	39 56	145 31	28
27	39 42	145 37	2
1895.	N.	E.	
Apr. 30	40 41	142 21	17
May 8	41 21	142 31	15
9	41 05	142 20	6
10	41 13	141 47	21
12	40 54	142 19	3
13	41 31	143 08	11
16	41 22	145 38	2
17	40 06	150 14	1
19	42 02	152 23	1
25	41 52	174 58	1
26	42 30	178 21	3
		W.	
June 1	40 42	177 47	4
11	40 31	150 21	1
13	40 46	148 15	.....
14	(a)	(a)	[illegible]
15	40 55	147 46	3
Total			[illegible]

a Calm. No observation.

ositions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

MERICAN SCHOONER RATTLER (JAPAN COAST AND BERING SEA), FREDERICK NIELSEN, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	E.			
.pr. 11	39 22	142 41	10	12	22
12	39 18	142 32	21	17	38
13	39 45	142 45	2	1	3
15	39 54	142 35	7	2	9
16	40 59	142 01	.....	2	2
18	40 13	143 55	1	.....	1
19	39 41	144 16	19	39	58
23	39 35	144 48	.....	4	4
28	39 08	145 11	.....	2	2
May 1	39 42	144 55	4	21	25
3	40 58	143 11	2	5	7
4	40 41	142 58	11	36	47
5	40 40	142 35	3	7	10
7	41 01	142 47	4	4	8
9	42 08	142 16	8	2	10
10	42 07	142 08	12	3	15
12	41 55	142 17	5	.....	5
13	41 42	142 38	11	17	28
14	41 40	142 43	3	4	7
15	41 23	143 32	3	.....	3
16	41 55	143 47	1	.....	1
24	41 52	144 42	3	1	4
25	41 40	144 00	2	.....	2
26	41 38	142 25	11	17	28
27	41 38	142 25	4	2	6
June 1	42 08	142 10	4	1	5
2	42 08	142 10	1	7	8
4	42 10	142 00	2	7	9
5	41 33	143 24	2	.....	2
6	42 11	144 38	5	11	16
7	42 39	145 32	3	8	11
8	43 06	146 11	.....	1	1
10	43 10	147 16	.....	2	2
11	43 10	147 16	1	.....	1
15	43 10	147 16	1	4	5
18	44 06	148 14	2	.....	2
29	41 42	175 56	29	12	41
30	42 03	176 21	.....	3	3
uly 6	43 15	176 00	21	71	92
7	43 09	175 58	7	24	31
8	43 34	175 55	.....	2	2
		W.			
ug. 1	54 57	167 45	10	21	31
2	54 52	167 32	3	7	10
4	55 09	169 37	3	7	10
8	54 59	169 12	.....	1	1
9	55 05	169 10	3	4	7
10	55 03	169 22	12	48	60
11	55 00	169 20	15	57	72
12	54 49	169 10	6	7	13
14	55 04	169 30	6	28	34
15	54 55	169 24	3	9	12
17	55 13	170 38	6	28	34
18	55 11	170 36	1	1	2
20	54 44	168 51	6	6	12
21	54 51	169 31	.....	1	1
22	55 05	170 38	6	24	30
24	56 49	174 49	.....	1	1
25	57 09	173 43	7	44	51
26	56 55	173 51	7	29	36
27	57 03	173 50	1	1	2
28	57 22	173 48	.....	13	13
ept. 1	58 36	173 32	.....	2	2
2	57 35	173 54	3	16	19
6	56 41	174 52	1	1	2
8	56 54	173 47	2	5	7
9	56 43	174 33	.....	2	2
10	56 42	173 30	.....	1	1
15	54 38	166 48	.....	1	1
18	54 42	166 22	.....	5	5
20	54 30	165 35	1	.....	1
Total	.....	.....	327	721	1,048

Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER WINCHESTER (JAPAN COAST), FRANK JOHNSON, MASTER.

Date.	Latitude.	Longitude.	Seals.
1894.	N.	W.	
Dec. 13	36 59	123 55	8
14	37 06	123 30	8
16	37 15	123 43	9
18	38 00	123 37	16
19	38 00	123 20	7
22	38 24	123 49	11
23	38 33	123 50	47
24	38 31	124 10	11
29	37 55	123 32	9
30	38 08	122 13	4
31	38 15	123 50	8
1895.			
Jan. 1	38 03	123 24	1
5	37 45	123 31	3
6	37 36	123 21	27
9	37 34	122 51	1
10	36 53	123 53	45
11	36 43	123 46	17
		E.	
Mar. 21	36 22	144 30	52
24	36 14	147 00	9
27	36 21	145 06	16
30	36 15	145 33	1
Apr. 1	36 30	146 10	33
2	36 39	146 02	25
3	36 25	145 49	38
5	36 25	145 49	16
6	36 26	146 25	7
15	39 38	142 29	18
16	39 15	142 46	18
17	40 04	142 56	4
18	40 06	143 00	13
19	39 55	143 25	44
23	40 37	143 42	8
26	42 22	145 02	1
27	42 37	144 40	2
May 4	42 25	144 30	9
5	42 00	145 24	1
6	41 11	146 10	13
8	39 46	143 52	8
1895—Continued.	N.	E.	
May 9	39 39	146 20	[illegible]
10	39 37	146 49	[illegible]
12	39 32	146 13	[illegible]
13	40 00	147 08	11
14	39 54	147 13	1
15	39 53	147 41	[illegible]
16	40 12	146 30	[illegible]
20	40 44	147 19	[illegible]
25	42 29	147 21	[illegible]
30	40 09	146 45	[illegible]
June 1	43 15	147 00	1
2	43 20	147 26	11
5	42 59	147 40	1
6	43 33	147 49	1
7	43 43	147 27	[illegible]
8	43 57	147 07	[illegible]
9	43 47	147 16	1
10	43 40	147 03	[illegible]
13	43 30	148 19	[illegible]
14	43 37	148 14	[illegible]
15	43 29	147 51	[illegible]
17	43 29	147 12	[illegible]
18	43 40	147 40	[illegible]
19	43 30	148 16	[illegible]
30	49 30	158 52	[illegible]
July 5	52 37	165 38	[illegible]
7	52 58	166 52	1
14	53 40	168 33	[illegible]
16	53 48	168 10	[illegible]
21	53 09	168 22	11
22	53 45	168 16	[illegible]
25	53 51	168 36	[illegible]
28	53 24	167 36	[illegible]
29	53 27	168 07	[illegible]
30	53 25	168 32	11
31	53 58	168 28	1
Aug. 1	53 27	168 56	[illegible]
2	53 30	168 20	[illegible]
5	53 16	168 50	1
Total			[illegible]

AMERICAN SCHOONER SOPHIA SUTHERLAND (JAPAN COAST), A. C. SUTHERLAND, MASTER.

1895.	N.	E.	
Mar. 9	36 16	144 36	1
13	36 53	141 46	3
21	36 26	144 45	54
24	38 13	142 27	12
30	39 27	143 28	6
Apr. 2	38 01	145 53	21
6	38 05	143 51	1
7	38 37	142 53	2
8	39 42	142 49	3
11	38 01	145 43	7
12	37 33	145 05	13
13	37 27	145 29	11
15	37 50	145 03	1
16	38 47	145 50	3
18	39 15	145 01	1
19	38 44	145 37	6
22	39 20	144 56	1
23	39 56	145 31	28
27	39 42	145 37	2
1895.	N.	E.	
Apr. 30	40 41	142 21	17
May 8	41 21	142 31	15
9	41 05	142 20	6
10	41 13	141 47	2
12	40 54	142 19	1
13	41 31	143 08	11
16	41 22	145 38	2
17	40 06	150 14	1
19	42 02	152 23	1
25	41 52	174 58	1
26	42 30	178 21	1
		W.	
June 1	40 42	177 47	4
11	40 31	150 21	1
13	40 46	148 15	.....
14	(a)	(a)	[illegible]
15	40 55	147 46	1
Total			[illegible]

a Calm. No observation.

ositions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

MERICAN SCHOONER RATTLER (JAPAN COAST AND BERING SEA). FREDERICK NIELSEN, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	E.			
pr. 11	39 22	142 41	10	12	22
12	39 18	142 32	21	17	38
13	39 45	142 45	2	1	3
15	39 54	142 35	7	2	9
16	40 59	142 01	.....	2	2
18	40 13	143 55	1	.....	1
19	39 41	144 16	19	39	58
23	39 35	144 48	.....	4	4
28	39 08	145 11	.....	2	2
Ay 1	39 42	144 55	4	21	25
3	40 58	143 11	2	5	7
4	40 41	142 58	11	36	47
5	40 40	142 35	3	7	10
7	41 01	142 47	4	4	8
9	42 08	142 16	8	2	10
10	42 07	142 08	12	3	15
12	41 55	142 17	5	.....	5
13	41 42	142 38	11	17	28
14	41 40	142 43	3	4	7
15	41 23	143 32	3	.....	3
16	41 55	143 47	1	.....	1
24	41 52	144 42	3	1	4
25	41 40	144 00	2	.....	2
26	41 38	142 25	11	17	28
27	41 38	142 25	4	2	6
une 1	42 08	142 10	4	1	5
2	42 08	142 10	1	7	8
4	42 10	142 00	2	7	9
5	41 33	143 24	2	.....	2
6	42 11	144 38	5	11	16
7	42 39	145 32	3	8	11
8	43 06	146 11	.....	1	1
10	43 10	147 16	.....	2	2
11	43 10	147 16	1	.....	1
15	43 10	147 16	1	4	5
18	44 06	148 14	2	.....	2
29	41 42	175 56	29	12	41
30	42 03	176 21	.....	3	3
uly 6	43 15	176 00	21	71	92
7	43 09	175 58	7	24	31
8	43 34	175 55	.....	2	2
		W.			
ug. 1	54 57	167 45	10	21	31
2	54 52	167 32	3	7	10
4	55 09	169 37	3	7	10
8	54 59	169 12	.....	1	1
9	55 05	169 10	3	4	7
10	55 03	169 22	12	48	60
11	55 00	169 20	15	57	72
12	54 49	169 10	6	7	13
14	55 04	169 30	6	28	34
15	54 55	169 24	3	9	12
17	55 13	170 38	6	28	34
18	55 11	170 36	1	1	2
20	54 44	168 51	6	6	12
21	54 51	169 31	.....	1	1
22	55 05	170 38	6	24	30
24	56 49	174 49	.....	1	1
25	57 09	173 43	7	44	51
26	56 55	173 51	7	29	36
27	57 03	173 50	1	1	2
28	57 22	173 48	.....	13	13
ept. 1	58 36	173 32	.....	2	2
2	57 35	173 54	3	16	19
6	56 41	174 52	1	1	2
8	56 54	173 47	2	5	7
9	56 43	174 33	.....	2	2
10	56 42	173 30	.....	1	1
15	54 38	166 48	.....	1	1
18	54 42	166 22	.....	5	5
20	54 30	165 35	1	.....	1
Total	.....	.....	327	721	1,048

Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER JANE GRAY (COAST OF JAPAN AND RUSSIA), S. H. BURTIS, MASTER.

Date.	Latitude.	Longitude.	Seals.
1895.	N.	E.	
Mar. 24	35 58	141 08	2
25	37 12	141 18	31
26	37 06	141 20	2
27	37 30	141 37	12
29	38 06	141 55	21
30	38 08	142 22	9
Apr. 2	37 40	143 20	23
3	38 07	142 30	11
5	38 29	142 20	6
9	39 31	142 25	9
12	37 40	142 21	2
15	40 19	143 18	14
16	40 27	142 15	30
17	40 28	142 05	7
18	40 15	142 16	10
19	40 11	142 25	75
20	40 09	142 24	11
22	40 50	143 00	71
23	40 00	143 00	30
25	39 37	142 22	5
27	39 58	142 30	58
28	40 09	142 12	19
30	40 50	142 15	4
May 1	41 54	142 00	6
2	41 54	142 00	32
3	41 54	142 00	33
4	41 54	142 00	39
5	41 54	142 00	32
6	41 54	142 00	94
7	41 54	142 00	55
9	41 54	142 00	1
10	41 54	142 00	16
13	41 54	142 00	14
14	41 30	142 10	24
15	41 25	142 15	51
16	41 25	142 15	8
20	41 55	142 40	26
21	41 40	142 40	4
23	41 35	142 15	19
24	41 25	142 15	23
25	41 45	142 45	14
May 26	41 42	142 49	[illegible]
27	41 36	142 46	[illegible]
June 1	41 06	143 20	[illegible]
2	41 06	143 20	[illegible]
3	41 06	143 20	[illegible]
5	42 30	146 24	[illegible]
6	42 44	146 20	[illegible]
7	42 55	146 16	[illegible]
13	43 47	148 35	[illegible]
14	44 00	147 10	[illegible]
15	44 15	146 10	[illegible]
17	44 10	146 55	[illegible]
18	44 18	147 08	[illegible]
19	44 12	147 28	[illegible]
23	44 10	147 40	[illegible]
24	43 21	148 00	[illegible]
Total			a1,111
Aug. 5	52 52	164 11	[illegible]
7	53 52	165 48	[illegible]
8	53 59	165 49	[illegible]
9	54 17	165 02	[illegible]
10	55 09	163 44	[illegible]
16	56 44	164 25	[illegible]
17	56 09	164 10	[illegible]
18	56 09	164 10	[illegible]
19	56 09	164 10	[illegible]
20	56 09	164 10	[illegible]
21	56 09	164 10	[illegible]
22	53 45	164 00	[illegible]
26	54 20	165 29	[illegible]
27	54 12	165 37	[illegible]
28	54 01	165 39	[illegible]
31	54 10	165 35	[illegible]
Sept. 2	54 10	165 35	[illegible]
3	54 10	165 35	[illegible]
4	54 10	165 35	[illegible]
Total			15

a June 19, one skin taken in trade, making 1,112 skins in all landed at Yokohama, Japan.

AMERICAN SCHOONER THERESE (BERING SEA), JOHN WORTH, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Aug. 10	56 46	168 41	8	22	[illegible]
11	a 54 58	168 50	3	8	11
12	54 36	168 32	.....	2	[illegible]
14	55 11	168 35	.....	1	1
15	54 48	168 23	4	11	15
17	56 00	172 00	2	19	[illegible]
18	55 58	172 10	3	11	[illegible]
19	a 56 00	172 12	11	17	[illegible]
			b 31	b 91	b 122
20	56 22	172 45	11	45	[illegible]
21	56 28	172 45	8	12	[illegible]
22	a 56 25	172 10	4	23	[illegible]
23	a 56 30	172 00	2	9	11
25	56 32	172 12	5	34	[illegible]
26	56 17	173 48	5	15	[illegible]
27	56 39	173 30	18	53	71
28	56 48	173 30	5	10	15
Sept. 1	57 11	172 48	.....	3	[illegible]
2	56 32	172 48	1	18	[illegible]
6	56 25	174 20	1	.....	1
8	56 43	172 28	4	8	12
9	57 04	173 34	1	9	[illegible]
Total			96	330	[illegible]

a Dead reckoning.

b August 20, latitude 56° 22′ north, longitude 173° 14′ west, the above number of skins and sex found to be correct by E. V. D. Johnson, lieutenant, United States revenue steamer Perry.

Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER COLUMBIA (NORTHWEST COAST), CHESTOQUA PETERSON, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Jan. 24	48 07	126 00	10	5	15
25	48 10	126 01	16	15	31
26	48 06	126 00	12	3	15
27	48 12	125 58	18	9	27
28	48 15	126 03	12	4	16
29	48 00	125 58	9	7	16
Feb. 7	48 07	126 00	24	10	34
8	48 08	125 58	3	3	6
9	48 12	125 59	8	7	15
Mar. 4	48 10	125 20	3	5	8
5	48 15	125 30	1	6	7
6	48 40	125 00	2	6	8
7	47 42	125 05	4	2	6
8	48 00	125 02	2	.....	2
21	47 48	125 21	11	39	50
23	47 46	125 25	.....	3	3
24	47 39	125 25	.....	2	2
25	47 33	125 20	1	.....	1
26	47 44	125 50	12	20	32
27	47 43	125 45	2	15	17
28	47 52	125 08	2	2	4
29	47 44	125 07	13	41	54
Total	.....	.....	165	204	a 369

a Shot 40, speared 329.

Customs examination, 216 females and 153 males.

AMERICAN SCHOONER COLUMBIA (NORTHWEST COAST), O. F. CHRISTIANSON, MASTER.

1895.	N.	W.			
Aug. 1	54 34	166 55	26	35	61
2	54 35	167 07	12	8	20
3	55 07	166 39	.....	1	1
4	55 05	166 27	.....	11	11
5	54 53	166 46	3	4	7
8	54 42	166 58	1	1	2
10	54 43	166 55	18	27	45
11	54 43	166 55	16	37	53
12	54 35	166 14	3	4	7
15	55 27	167 10	6	57	63
17	55 20	167 18	.....	2	2
19	55 02	167 28	1	3	4
20	54 56	167 28	14	41	55
21	54 59	167 28	9	10	19
24	55 07	167 03	12	18	30
26	54 22	167 33	5	9	14
27	54 15	167 33	6	8	14
28	54 35	167 16	2	4	6
31	55 41	167 10	.....	1	1
Sept. 1	55 35	167 08	4	32	36
2	55 28	166 50	2	2	4
3	54 30	166 43	.....	1	1
7	55 02	166 27	4	14	18
8	55 12	166 37	2	14	16
9	54 47	166 38	2	3	5
10	54 35	166 31	11	22	33
11	54 51	166 40	2	2	4
16	54 35	166 24	1	8	9
18	54 19	166 14	1	2	3
Total	.....	.....	163	381	544

Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER JAS. G. SWAN (NORTHWEST COAST), PETER BROWN, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Feb. 2	48 00	126 00	9	6	15
3	48 07	125 58	22	12	34
7	48 12	126 03	3	4	7
8	48 09	126 05	10	17	27
Mar. 5	48 05	125 15	3	2	5
6	47 50	125 20	.....	1	1
7	47 40	125 19	3	5	8
8	47 45	125 21	5	6	11
Apr. 21	47 49	125 23	10	13	23
22	47 50	125 20	.....	2	2
24	47 40	125 22	1	1	2
25	47 42	125 23	3	2	5
26	47 50	125 30	14	7	21
27	47 51	125 21	3	5	8
29	47 44	125 05	14	41	55
Total	.....	.....	100	124	a 224

a Shot 30, speared 194.

Customs examination, 156 females and 68 males.

AMERICAN SCHOONER JAS. G. SWAN (BERING SEA), J. W. TODD, MASTER.

1895.	N.	W.			
Aug. 1	54 22	166 59	7	3	10
2	54 38	167 43	3	5	8
3	54 42	167 38	8	7	15
4	54 44	166 55	12	10	22
8	55 24	171 42	.....	1	1
9	55 10	171 02	3	8	11
10	55 20	170 11	10	81	91
11	54 52	170 15	9	64	73
12	54 48	170 22	4	5	9
14	55 18	170 30	8	68	76
15	55 18	170 17	7	57	64
17	55 22	170 09	16	73	89
19	55 07	169 53	.....	1	1
20	55 30	169 58	16	82	98
21	55 22	170 08	11	55	66
22	55 22	170 06	12	68	80
26	55 08	170 40	8	52	60
27	55 04	170 45	25	55	80
28	55 14	170 40	7	23	30
31	55 22	169 48	3	4	7
Sept. 1	55 24	169 54	31	121	152
2	55 24	170 25	8	13	21
10	55 24	170 20	4	16	20
Total	.....	.....	212	872	1,084

AMERICAN SCHOONER STELLA ERLAND (NORTHWEST COAST), H. K. NEWGARD, MASTER.

1895.	N.	W.			
Feb. 7	48 16	125 36	3	6	9
8	47 51	125 18	5	1	6
9	48 03	125 29	10	6	16
Mar. 4	47 46	125 10	1	.....	1
5	47 46	125 50	4	.....	4
6	47 45	125 25	2	1	3
7	47 57	125 02	2	.....	2
8	47 45	125 35	7	8	15
9	47 34	125 50	3	.....	3
21	48 01	126 00	4	6	10
24	47 47	125 05	.....	2	2
25	47 32	125 45	1	2	3
26	47 33	125 30	15	18	33
27	47 45	125 30	7	5	12
28	47 42	125 25	.....	1	1
29	48 00	125 14	19	26	45
Total	.....	.....	83	82	a 165

a Shot 2, speared 163.

Customs examination, 130 females and 35 males.

Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER STELLA ERLAND (BERING SEA), B. B. WHITNEY, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Aug. 1	54 28	166 19	29	43	72
2	54 32	166 34	1	6	7
3	54 29	166 29	1	2	3
4	54 17	167 55	5	.....	5
5	54 12	168 33	1	.....	1
8	54 03	168 03	.....	1	1
9	54 56	168 03	1	3	4
10	54 56	168 05	13	44	57
11	54 37	167 30	16	47	63
12	54 21	167 11	20	17	37
15	55 04	166 54	5	57	62
17	54 56	167 27	12	19	31
19	55 14	167 32	5	18	23
20	55 10	167 51	9	26	35
21	55 03	168 14	8	12	20
22	55 12	167 26	.....	12	12
23	54 26	166 17	7	16	23
24	54 33	167 17	12	23	35
27	54 38	165 46	8	15	23
28	54 41	165 56	18	47	65
Sept. 2	55 00	168 37	1	.....	1
7	55 13	172 60	3	4	7
9	55 49	172 23	6	28	34
10	55 50	172 15	2	4	6
15	55 05	167 02	.....	3	3
16	55 56	165 34	.....	2	2
20	54 31	165 32	20	24	44
Total	.....	.....	203	473	676

AMERICAN SCHOONER PURITAN (NORTHWEST COAST), IDIS WOODWARD, MASTER.

Date.	Males.	Females.	Total.
Between March 8 and March 25, 1895	2	2	4
Between March 25 and April 30, 1895	2	4	6
Total	4	6	*a* 10

a Speared.

AMERICAN SCHOONER TEASER (NORTHWEST COAST), MAC OLESON, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Mar. 5	48 08	125 42	6	8	14
6	47 45	125 18	1	2	3
7	47 10	125 58	.....	2	2
8	47 56	126 18	3	2	5
9	47 56	126 25	.....	1	1
Apr. 8	48 05	126 26	5	4	9
21	47 44	125 12	6	8	14
22	47 49	126 26	4	3	7
26	47 43	125 34	8	6	14
27	47 43	125 24	8	10	18
Total	.....	.....	41	46	*a* 87

a Shot 2, speared 85.

Customs examination, 64 females and 23 males.

Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER AUGUST (NORTHWEST COAST), CHARLES WEIBERHARD, MASTER.

Date.	Males.	Females.	Total.
Between March 8 and March 25, 1895	2	4	a6

a Speared.

AMERICAN SCHOONER MATILDA (NORTHWEST COAST), JAMES YOKUM, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Jan. 29	48 06	125 32	.....	4	4
Feb. 9	48 01	125 26	1	.....	1
Mar. 5	47 53	125 40	.....	1	1
8	47 40	125 54	1	.....	1
9	47 42	125 43	1	.....	1
Apr. 21	48 00	127 00	1	5	6
22	47 00	135 26	.....	1	1
24	47 40	127 43	1	2	3
26	48 00	126 00	8	7	15
27	48 06	125 32	.....	2	2
Total	.....	.....	13	22	a35

a Shot 3, speared 32.

Customs examination, 30 females and 5 males.

AMERICAN SCHOONER C. C. PERKINS (NORTHWEST COAST), TOKASKO, OR LIGHTHOUSE JIM, MASTER.

Date.	Males.	Females.	Total.
Between February 28 and March 25, 1895	5	17	22
March 25 to April 30, 1895	3	9	12
Total	8	26	a34

a Speared.

AMERICAN SCHOONER ELSIE (NORTHWEST COAST), N. T. OLLIVER, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Feb. 8	48 07	125 28	11	4	15
9	47 50	125 30	26	11	37
13	48 02	125 33	3	.....	3
22	48 03	124 50	1	.....	1
23	47 51	125 12	2	2	4
24	47 45	125 00	11	5	16
Mar. 3	47 55	125 04	4	4	8
4	48 01	125 05	3	1	4
5	47 58	125 32	2	3	5
6	47 28	124 50	.....	2	2
9	47 56	124 55	.....	2	2
10	47 50	125 25	1	1	2
31	48 00	125 03	1	.....	1
Apr. 4	47 50	125 12	4	11	15
8	47 50	125 12	3	5	8
20	48 02	125 00	4	6	10
21	47 40	125 12	1	26	27
22	47 56	124 52	.....	6	6
24	47 50	125 12	1	4	5
26	47 48	125 15	2	11	13
27	47 57	125 12	1	3	4
29	48 20	125 45	3	18	21
Total	.....	.....	84	125	a209

a Shot 204, speared 5.

***Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895*—Continued.**

AMERICAN SCHOONER BERING SEA (NORTHWEST COAST), L. LARSEN, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Mar. 4	48 30	125 19	1	3	4
5	47 28	125 00	3	5	8
6	47 39	125 10	.....	2	2
7	47 50	125 30	1	1	2
9	48 09	127 00	8	19	27
10	48 05	127 10	.....	2	2
Apr. 19	48 46	126 30	4	5	9
20	48 30	126 40	7	11	18
21	48 30	126 30	12	21	33
22	48 20	126 15	1	.....	1
27	48 07	126 30	21	12	33
28	48 10	126 20	2	2	4
29	48 15	126 15	16	21	37
Total	.....	.....	76	104	a 180

a Shot 8, speared 172.

Customs examination, 145 females and 35 males.

AMERICAN SCHOONER BERING SEA (BERING SEA), L. LARSEN, MASTER.

1895.	N.	W.			
Aug. 1	54 35	166 50	18	41	59
2	54 52	166 51	2	18	20
3	54 54	167 10	.....	1	1
4	55 03	166 54	.....	7	7
6	54 55	166 57	1	.....	1
8	54 57	166 03	.....	1	1
9	54 49	167 10	1	3	4
10	54 50	167 23	10	31	41
11	54 40	166 45	32	105	137
12	54 42	166 17	.....	2	2
15	54 34	166 09	17	53	70
20	54 30	166 40	7	16	23
21	54 19	167 04	6	4	10
22	54 40	166 44	4	7	11
23	54 40	166 24	.....	10	10
24	54 48	165 35	6	27	33
26	54 38	167 56	4	6	10
27	54 24	167 15	10	23	33
28	54 18	167 15	4	8	12
31	54 35	166 25	4	12	16
Sept. 1	55 00	166 30	7	19	26
2	55 24	166 24	.....	8	8
3	55 21	167 30	.....	2	2
7	55 05	168 24	9	23	32
8	55 20	169 30	6	19	25
9	55 10	169 46	.....	1	1
10	55 15	169 50	8	20	28
13	54 51	168 08	.....	1	1
15	54 50	167 00	1	15	16
16	54 34	166 30	5	10	15
21	54 25	166 00	3	5	8
Total	.....	.....	165	498	663

AMERICAN SCHOONER DEEAHKS (NORTHWEST COAST), JOHN JAMES, MASTER.

1895.	N.	W.			
Mar. 4	48 00	125 00	5	3	8
5	47 56	125 12	4	8	12
6	47 38	125 05	3	5	8
7	47 24	125 10	4	5	9
8	47 19	125 08	3	6	9
Apr. 21	(a)	(a)	8	10	18
23	(a)	(a)	2	.....	2
	(a)	(a)	10	6	16
Total	.....	.....	39	43	b 82

a No position for these days. b Shot 9, speared 73.

Customs examination, 62 females and 20 males.

Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER DEEAHKS (BERING SEA), BEN MARTINIUS, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Aug. 1	54 22	166 58	6	5	11
2	54 18	168 15	4	4	8
4	54 32	167 45	2	3	5
5	54 30	167 51	3	12	15
7	54 50	165 55	.....	1	1
8	55 04	166 01	1	.....	1
9	54 56	165 55	6	17	23
10	54 48	166 00	11	60	71
11	54 52	166 09	15	46	61
12	54 50	165 45	5	13	18
14	55 20	168 18	8	39	47
15	55 14	168 08	13	49	62
17	55 14	168 28	2	19	21
18	55 15	168 39	1	4	5
20	54 20	167 03	8	35	43
21	54 18	166 49	3	10	13
27	55 02	166 46	2	19	21
28	54 52	166 20	15	33	48
30	54 35	166 40	2	1	3
31	54 28	167 34	6	16	22
Sept. 1	54 25	167 26	10	15	25
2	54 50	167 40	1	8	9
7	55 25	167 10	8	20	28
8	55 30	167 38	6	8	14
9	54 55	167 00	.....	3	3
10	55 05	166 52	2	9	11
11	55 25	166 10	.....	1	1
15	54 50	165 32	1	1	2
Total	.....	.....	141	451	592

AMERICAN SCHOONER EMMETT FELITZ (NORTHWEST COAST), JAMES CLAPLANHOZ, MASTER.

Date.	Males.	Females.	Total.	Date.	Males.	Females.	Total.
1895.				1895.			
Mar. 4	3	.....	3	Apr. 22	.....	1	1
5	.....	3	3	25	1	1	2
6	1	5	6	26	1	1	2
7	.....	3	3	27	.....	7	7
8	.....	3	3				
Apr. 21	3	16	19	Total	9	40	a 49

a Shot 16, speared 33.

AMERICAN SCHOONER IDLER (NORTHWEST COAST), L. A. LONSDALE, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Jan. 28	47 25	125 00	1	1	2
Feb. 6	48 05	125 40	4	4	8
8	47 50	125 10	.....	1	1
9	47 50	125 10	.....	1	1
10	47 50	125 10	.....	2	2
Mar. 5	48 00	125 00	.....	1	1
Apr. 9	48 20	125 35	.....	3	3
21	48 00	125 50	1	3	4
23	48 00	125 30	.....	1	1
26	48 10	125 00	.....	9	9
27	48 20	125 00	.....	6	6
29	48 20	125 30	.....	3	3
Total	.....	.....	6	35	a 41

a Shot.

Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER JESSIE (NORTHWEST COAST).

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Apr. 10, 1895	48 09	125 04	2	22	a 24

a Shot 2, speared 22.

Customs examination, 24 females; 22 were pregnant when caught.

AMERICAN SCHOONER R. ECRETT (NORTHWEST COAST).

1895.	N.	W.			
Mar. 5	47 50	125 20	5	1	6
6	48 00	125 30	4	3	7
7	48 00	125 30	5	.....	5
8	47 30	125 20	4	.....	8
9	47 45	125 25	4	3	4
10	47 45	125 25	3	4	7
Apr. 14	47 50	125 40	1	.....	7
20	48 20	125 20	7	3	11
21	48 14	125 30	4	2	0
23	47 30	125 30	2	2	6
24	48 31	125 35	.....	2	4
27	47 30	125 30	9	7	12
28	48 25	125 00	4	2	6
29	48 20	125 00	13	5	16
Total	.....	.....	65	34	a 99

a Shot 50, speared 49.

Customs examination, 90 females and 9 males.

AMERICAN SCHOONER GEO. W. PRESCOTT (BERING SEA), HENRY McALMOND, MASTER.

1895.	N.	W.			
Aug. 1	54 40	168 10	17	15	62
2	54 30	168 00	16	5	21
10	54 34	166 00	7	5	12
11	54 27	166 30	16	23	39
12	54 24	166 40	4	4	8
15	54 30	166 49	14	6	20
17	54 40	168 25	3	14	17
18	54 45	168 20	2	5	7
19	54 40	168 24	.....	13	13
20	54 50	168 35	.....	15	15
21	55 30	168 01	.....	6	6
22	54 30	168 20	4	.....	4
24	55 17	167 40	.....	1	1
27	54 35	165 25	5	6	11
28	54 34	165 30	10	17	27
30	54 48	165 30	.....	1	1
31	54 45	165 35	37	23	60
Sept. 1	54 40	165 40	.....	8	8
2	54 38	165 45	.....	3	3
3	54 35	165 50	.....	2	2
8	55 00	167 40	4	10	14
9	55 15	167 40	.....	5	5
10	55 15	167 40	.....	1	1
12	55 05	166 15	2	.....	2
Total	.....	.....	141	188	329

Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER ALLIE I. ALGAR (BERING SEA), H. B. JONES, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Aug. 4	55 27	166 46	1	7	8
5	55 42	167 07	1	3	4
11	55 36	167 11	4	52	56
12	55 17	167 13	1	.....	1
15	55 01	167 24	5	34	39
17	55 40	167 23	.....	2	2
20	55 17	166 50	2	27	29
21	55 02	167 20	1	13	14
24	55 44	167 34	.....	1	1
25	55 12	168 54	.....	1	1
26	55 20	169 13	2	10	12
27	54 56	169 20	2	10	12
28	54 31	169 32	1	6	7
Sept. 3	56 41	167 06	.....	7	7
Total	.....	.....	20	173	193

AMERICAN SCHOONER WILLARD AINSWORTH (BERING SEA), E. E. CROCKETT, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Aug. 2	54 49	166 30	1	.....	1
4	55 10	168 29	6	12	18
9	55 08	168 14	.....	2	2
10	55 16	168 25	5	15	20
11	55 10	168 25	12	51	63
12	55 00	167 20	4	19	23
14	55 06	168 40	2	4	6
15	55 20	168 46	15	32	47
17	55 21	168 32	7	36	43
19	55 09	168 35	2	5	7
20	55 18	169 10	18	38	56
21	55 32	168 53	20	38	58
22	55 00	169 57	1	20	21
24	54 57	169 57	7	11	18
27	54 55	168 00	6	9	15
28	54 36	167 30	4	9	13
Sept. 1	55 00	171 35	7	19	26
8	54 39	167 13	.....	2	2
9	54 40	166 00	.....	1	1
Total	.....	.....	117	323	440

AMERICAN SCHOONER M. M. MORRILL (BERING SEA), EDWARD CANTILLION, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Aug. 1	54 27	166 50	10	5	15
4	54 51	169 44	5	15	20
5	55 05	170 20	4	7	11
9	55 16	170 30	.....	1	1
10	55 10	170 12	4	30	34
11	55 12	170 25	7	37	44
12	55 12	170 18	4	14	18
14	55 12	169 47	6	10	16
15	54 58	169 25	7	24	31
17	55 20	169 28	5	16	21
20	55 10	169 46	13	46	59
21	55 13	169 47	.....	7	7
22	55 07	169 24	4	13	17
24	55 17	169 27	.....	1	1
26	54 53	169 45	1	2	3
27	55 00	170 00	11	24	35
28	55 10	170 09	1	6	7
Sept. 1	54 50	167 15	10	6	16
2	54 40	167 20	1	1	2
7	55 18	167 12	2	9	11
8	54 00	167 00	2	11	13
9	54 33	166 50	1	4	5
10	54 27	166 50	4	2	6
Total	.....	.....	102	291	393

Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER KATE AND ANNA (NORTHWEST COAST), CHARLES LUTZENS, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.					
Jan. 15				1	1
25	18 miles SW	Point Reyes		6	6
26	38 00 N	123 36 W		2	2
28	37 09 N	123 10 W		3	3
29	37 04 N	122 55 W		4	4
31	15 miles SW	S. Farallon		4	4
Feb. 1	15 miles SW	Point Reyes		5	5
3	38 17 N	123 33 W		5	5
4	38 16 N	123 25 W		13	13
5	38 14 N	123 15 W	2		2
14			1	15	16
15	38 06	123 24 W		3	3
16	38 00	123 20 W	3	10	13
19	15 miles SW	Point Reyes		5	5
20	22 miles SW	do		8	8
21	20 miles	do		8	8
23	38 42 N	123 50 W		1	1
27	38 25 N	123 45 W		2	2
Mar. 1				5	5
2	20 miles NE. by E	Point Reyes		8	8
3	20 miles NE. by E	do		2	2
4	25 miles ESE	do		7	7
5	20 miles E. by S	do	1	19	20
6	18 miles ESE	do		2	2
7	16 miles E. by S	do	4	14	18
15	37 34 N	123 50 W		2	2
18			8	20	28
22	38 00 N	123 40 W		3	3
23	38 08 N	123 25 W		2	2
24	30 miles ENE	Point Reyes	1	11	12
25	38 16 N	123 47 W		6	6
30	42 00 N	124 25 W		8	8
Apr. 6	44 04 N	124 30 W	1	9	10
7	44 01 N	124 25 W		7	7
18	47 12 N	125 08 W	5	14	19
19	47 20 N	125 05 W	5	24	29
20	47 27 N	125 15 W	1	29	30
21	47 21 N	125 00 W	4	10	14
25	47 25 N	129 05 W		1	1
26	47 27 N	125 25 W	4	11	15
27	47 45 N	125 10 W		5	5
28	47 24 N	124 30 W		3	3
29	18 miles NE. by E	Cape Disappointment	3	30	33
	Total		43	347	a 390

a Shot.

Miscellaneous data showing positions where fur seals were taken by Canadian and American vessels in the North Pacific Ocean and Bering Sea in 1895.

[Data collected by C. H. Townsend and A. B. Alexander.]

CANADIAN SCHOONER VICTORIA (NORTHWEST COAST AND BERING SEA).

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Mar. 1	48 10	125 30	4	4	8
3	48 00	125 40	4	6	10
4	48 20	125 50	6	8	14
5	47 50	125 10	3	10	13
6	47 45	125 20	2	6	8
7	48 00	126 30	2	8	10
8	48 30	126 30		5	5
16	49 00	127 49		8	8
Apr. 9	58 10	139 00	6	3	9
10			4	1	5
12	58 25	139 40	4		4
16	58 30	140 08	5	3	8
17	58 30	140 08	21	10	31
19	58 44	140 00	1	[illegible]	[illegible]

Miscellaneous data showing positions where fur seals were taken by Canadian and American vessels in the North Pacific Ocean and Bering Sea in 1895—Continued.

CANADIAN SCHOONER VICTORIA (NORTHWEST COAST AND BERING SEA)—Cont'd.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Apr. 23	58 13	141 40	6	1	7
24	58 13	141 40	4	2	6
25	58 17	142 36	2	.....	2
26	58 30	142 44	.....	.....	1
27	58 30	142 44	4	.....	4
28	58 45	143 50	17	12	29
30	58 45	143 50	.....	1	1
Aug. 1	54 39	167 12	25	30	55
2	54 21	167 02	11	8	19
3	54 45	166 45	3	2	5
4	54 45	166 48	13	15	28
5	54 57	167 15	7	9	16
8	54 48	167 48	5	8	13
9	55 04	168 15	9	5	14
10	55 05	168 16	81	56	137
11	55 04	168 15	94	172	266
12	55 00	168 28	33	18	51
14	55 15	168 20	21	15	36
15	55 13	168 17	28	22	50
17	55 30	168 25	34	48	82
19	55 22	168 15	5	3	8
20	55 20	167 47	.....	15	15

CANADIAN SCHOONER TRIUMPH (NORTHWEST COAST AND BERING SEA), COX, MASTER.

1895.	N.	W.			
Feb. 22	48 10	125 30	1	5	6
23	48 14	125 31	3	6	9
24	48 17	125 18	2	10	12
Mar. 1	48 00	125 20	4	17	21
3	48 00	125 20	2	9	11
5	48 04	125 36	4	10	14
16	50 13	129 47	11	13	24
22	56 07	137 07	6	2	8
24	57 40	138 03	3	.....	3
25	57 32	138 24	4	2	6
27	57 37	138 48	2	1	3
28	57 31	138 32	6	3	9
Apr. 3	57 31	137 51	88	30	118
4	57 30	137 56	4	.....	4
9	57 24	139 28	4	10	14
10	57 28	138 09	9	7	16
12	57 58	139 08	11	10	21
16	59 10	142 45	3	3	6
19	59 07	142 19	20	9	29
23	58 11	140 05	9	.....	9
28	52 27	133 25	6	2	8
Aug. 1	55 08	167 56	70	59	129
2	55 08	167 56	20	18	38
3	55 06	167 46	3	4	7
4	55 02	167 50	24	54	78
5	55 05	167 15	15	13	28
9	55 02	167 33	7	5	12
10	55 00	167 18	24	30	54
11	54 58	167 18	46	80	126
12	55 00	167 21	7	8	15
13	54 54	168 15	1	.....	1
14	55 04	168 20	13	9	22
15	55 04	168 40	60	74	134
17	55 20	169 09	99	107	216
18	55 20	169 09	5	4	9
19	55 32	168 18	39	44	83
20	55 24	167 49	24	59	83

***Miscellaneous data showing positions where fur seals were taken by Canadian and American vessels in the North Pacific Ocean and Bering Sea in 1895*—Continued.**

CANADIAN SCHOONER FAVORITE (NORTHWEST COAST), L. McLEAN, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Mar. 9	48 00	128 23	4	.....	4
13	49 06	127 39	7	2	9
14	48 42	127 17	3	.....	3
15	48 45	127 23	3	3	6
16	50 03	129 50	15	5	20
22	56 49	138 05	4	2	6
25	57 30	138 30	2	.....	2
26	57 18	138 45	3	.....	3
28	57 53	139 26	5	1	6
Apr. 3	57 45	138 50	20	12	32
8	58 12	140 56	4	.....	4
9	58 15	141 00	8	.....	8
10	58 30	139 40	7	.....	7
11	57 48	140 50	10	2	12
12	57 46	141 30	5	.....	5
18	58 00	141 38	8	.....	8
19	58 15	141 40	4	.....	4
23	58 12	139 41	4	.....	4
24	57 46	138 45	1	1	2
25	57 46	138 00	5	.....	5
Total	.....	.....	122	28	150

CANADIAN SCHOONER SAPPHIRE (NORTHWEST COAST), COX, MASTER.

1895.	N.	W.			
Feb. 23	48 30	125 20	2	4	6
Mar. 1	48 00	125 57	7	5	12
3	47 32	125 56	5	4	9
5	48 16	126 04	11	7	18
16	50 57	131 57	7	6	13
20	55 01	135 19	4	4	8
22	57 22	139 30	5	3	8
24	57 38	138 49	1	.....	1
25	57 48	138 26	13	.....	13
27	57 28	139 38	2	.....	2
28	57 15	139 30	2	.....	2
31	58 30	139 54	2	.....	2
Apr. 3	58 30	141 15	25	.....	25
4	58 38	141 11	14	.....	14
10	58 45	141 30	17	.....	17
11	58 27	141 46	5	.....	5
12	58 58	140 50	13	.....	13
16	59 10	143 18	4	.....	4
17	59 04	143 06	3	.....	3
18	58 24	140 30	4	.....	4
19	58 37	139 36	5	.....	5
24	58 11	139 07	3	.....	3
Total	.....	.....	154	33	187

CANADIAN SCHOONER DORA SIEWERD (NORTHWEST COAST), H. F. SIEWERD, MASTER.

1895.	N.	W.			
Feb. 26	47 47	125 25	16	7	23
20	47 25	125 10	29	13	42
22	48 01	125 00	4	3	7
23	47 56	125 06	6	5	11
24	47 58	125 28	6	3	9
28	47 13	124 24	19	13	32
Mar. 1	47 20	124 50	2	6	8
3	45 55	124 42	14	24	38
6	47 12	124 45	8	4	12
7	47 19	125 08	21	15	36
8	47 28	124 27	1	3	4
9	46 55	124 50	3	5	8
10	46 44	124 56	19	16	35
12	46 37	124 51	17	29	46
13	47 10	125 00	2	4	6
14	46 26	124 51	3	5	8
26	50 07	129 00	29	14	43

Miscellaneous data showing positions where fur seals were taken by Canadian and American vessels in North Pacific Ocean and Bering Sea in 1895—Continued.

CANADIAN SCHOONER DORA SIEWERD (NORTHWEST COAST), H. F. SIEWERD, MASTER—Continued.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Apr. 1	55 27	135 00	2	2	4
3	55 27	135 00	1	1	2
9	58 46	140 00	13	4	17
10	58 35	140 45	10	.....	10
12	58 46	139 43	11	4	15
17	58 31	142 15	6	.....	6
18	58 00	142 00	9	5	14
19	58 14	141 12	3	.....	3
23	58 42	140 20	14	4	18
24	58 43	140 39	4	1	5
25	58 23	140 30	3	2	5
28	56 05	135 39	12	4	16
Total	.....	.....	287	216	503

CANADIAN SCHOONER WALTER L. RICH (NORTHWEST COAST), BALCOM, MASTER.

1895.	N.	W.			
Mar. 13	48 58	128 35	5	2	7
25	58 08	138 36	12	12	24
28	57 29	138 40	6	2	8
Apr. 1	57 20	140 00	10	9	19
9	58 20	140 00	6	6	12
10	58 24	140 00	8	11	19
19	58 41	140 07	12	10	22
23	59 03	140 50	20	7	27
28	55 35	135 20	4	3	7
Total	.....	.....	83	62	145

AMERICAN SCHOONER IDA ETTA (COASTS OF JAPAN AND RUSSIA), HUGHES, MASTER.

Date.	Latitude.	Longitude.	Seals.	Date.	Latitude.	Longitude.	Seals.
1895.	N.	E.		1895.	N.	E.	
Mar. 25	36 15	142 25	2	May 12	Off Cape Yerimo, ENE. 20 miles.		16
30	.....	.....	7				
Apr. 1	36 32	144 47	11	16	40 03	146 02	33
2	.....	.....	1	20	39 57	146 25	35
3	15 miles off shore.		2	23	40 20	145 44	15
4	.....	.....	2	24	40 12	146 30	33
5	.....	.....	6	25	39 57	145 55	29
6	.....	.....	14	27	40 03	146 19	5
7	39 41	144 11	.....	30	39 50	145 55	4
12	39 48	143 56	21	June 2	39 55	145 46	21
18	40 06	146 07	5	3	39 15	146 00	1
19	.....	.....	24	5	39 30	146 10	11
22	39 06	146 49	2	6	39 38	146 29	31
23	39 42	146 27	16	7	39 36	146 26	9
28	39 44	145 58	34	Aug. 20	Cape Nagikinski, SW. 30 miles.		37
May 1	40 30	145 55	37				
3	41 45	144 00	1	21	Cape Nagikinski, SW. 20 miles.		35
4	Off Cape Yerimo, NW. 15 miles.		8				
5	Off Cape Yerimo, NNE. 10 miles.		17	24	do		28
				26	do		28
				27	Cape Nagikinski, W. 30 miles.		10
6	Off Cape Yerimo, N. 20 miles.		32				
				31	do		3
7	Off Cape Yerimo, WNW. 15 miles.		24	Sept. 1	Cape Nagikinski, WSW. 25 miles.		25
8	Off Cape Yerimo, WNW. 8 miles.		25	2	Cape Nagikinski, SW. 20 miles.		6
9	Off Cape Yerimo, E. by N. 20 miles.		16	3	Cape Nagikinski, SW. 30 miles.		4
10	Off Cape Yerimo, E. 25 miles.		20	4	Cape Nagikinski, SW. 25 miles.		4

Miscellaneous data showing positions where fur seals were taken by Canadian and American vessels in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER ALLIE J. ALGAR (JAPAN COAST), JONES, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	E.			
Mar. 7	36 24	141 39	6	5	11
9	37 00	141 00	1	.....	1
11	36 39	142 13	50	17	67
12	36 24	141 50	12	4	16
14	36 33	142 18	10	5	15
20	37 00	143 35	8	3	11
21	37 09	143 25	1	3	4
22	37 47	142 14	2	.....	2
24	37 22	141 41	20	8	28
26	37 26	142 18	5	7	12
29	38 57	143 35	12	8	20
30	39 14	142 48	14	4	18
Apr. 3	37 35	142 25	5	1	6
5	37 50	141 53	.....	1	1
12	38 07	146 32	1	.....	1
13	37 59	145 50	18	7	25
15	37 22	145 50	12	7	19
16	37 35	147 07	5	2	7
17	39 05	146 15	1	4	5
18	39 14	146 35	49	19	68
19	39 37	146 23	32	22	54
22	39 35	146 07	31	22	53
23	39 44	145 45	29	15	44
May 4	41 54	144 30	4	2	6
5	41 49	143 55	3	1	4
6	41 28	142 56	39	13	52
7	41 29	142 28	51	11	62
8	41 21	142 00	2	4	6
9	42 00	141 40	2	.....	2
10	41 45	142 40	6	3	9
11	41 43	142 48	1	.....	1
12	42 00	142 52	5	4	9
13	41 57	142 49	37	15	52
14	42 10	142 40	15	11	26
15	41 39	142 50	19	11	30
23	43 12	146 39	9	3	12
24	42 23	146 40	39	9	48
25	43 27	146 36	37	7	44
26	43 24	146 21	3	1	4
27	43 28	146 40	5	1	6
June 2	43 00	146 59	3	1	4
5	43 37	147 00	1	.....	1
6	43 50	147 11	9	5	14
7	43 53	147 14	23	3	26
8	44 00	147 20	6	3	9
10	44 17	147 40	19	17	36
11	44 50	148 47	.....	2	2
13	45 14	149 00	4	1	5
15	45 00	148 55	4	3	7
17	44 05	148 40	9	4	13
18	44 40	147 45	20	3	23
30	49 09	157 13	1	.....	1
July 1	43 35	156 26	1	.....	1
Total	.....	.....	701	302	1,003

Miscellaneous data showing positions where fur seals were taken by Canadian and American vessels in the North Pacific Ocean and Bering Sea in 1895—Continued.

CANADIAN SCHOONER BOREALIS (NORTHWEST COAST), ROBBINS, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Mar. 1	48 10	125 30	4	4	8
3	48 00	125 40	4	6	10
4	48 20	125 40	6	8	14
5	47 50	125 10	3	10	13
6	47 45	125 20	2	6	8
7	48 00	126 30	2	8	10
8	48 30	126 30	.....	5	5
16	49 00	127 49	.....	8	8
Apr. 9	58 10	139 00	6	3	9
10	.....	.....	4	1	5
12	58 25	139 40	4	.....	4
16	58 30	140 08	5	3	8
17	.....	.....	21	10	31
19	58 44	140 00	1	3	4
23	58 13	141 40	6	1	7
24	.....	.....	4	2	6
25	58 17	142 36	2	.....	2
26	58 30	142 44	.....	.....	1
27	.....	.....	4	.....	4
28	58 45	143 50	17	12	29
30	.....	.....	1	.....	1
Total	.....	.....	96	91	187

CANADIAN SCHOONER BOREALIS (BERING SEA), ROBBINS, MASTER.

[Record to August 9 only.]

1895.	N.	W.			
Aug. 5	56 20	174 35	.....	4	4
7	56 35	173 15	.....	1	1
9	56 35	173 33	.....	2	2

CANADIAN SCHOONER VERA (BERING SEA), SHIELDS, MASTER.

[Record to August 12 only.]

1895.	N.	W.			
Aug. 1	54 18	167 25	1	.....	1
2	54 51	169 15	8	24	32
3	54 49	169 10	3	5	8
4	54 45	169 10	5	16	21
7	54 53	168 25	2	.....	2
9	54 47	168 18	7	6	13
10	54 54	168 23	14	47	61
11	54 49	168 25	7	13	20
12	54 55	168 52	.....	4	4

CANADIAN SCHOONER ENTERPRISE (BERING SEA), DALEY, MASTER.

[Record to August 11 only.]

1895.	N	W.			
Aug. 1	54 34	166 55	13	22	35
2	54 40	166 30	16	14	30
3	55 07	166 35	5	4	9
4	55 00	167 04	9	10	19
9	54 50	168 50	15	19	34
10	54 50	168 30	77	30	107
11	54 50	168 30	54	65	119

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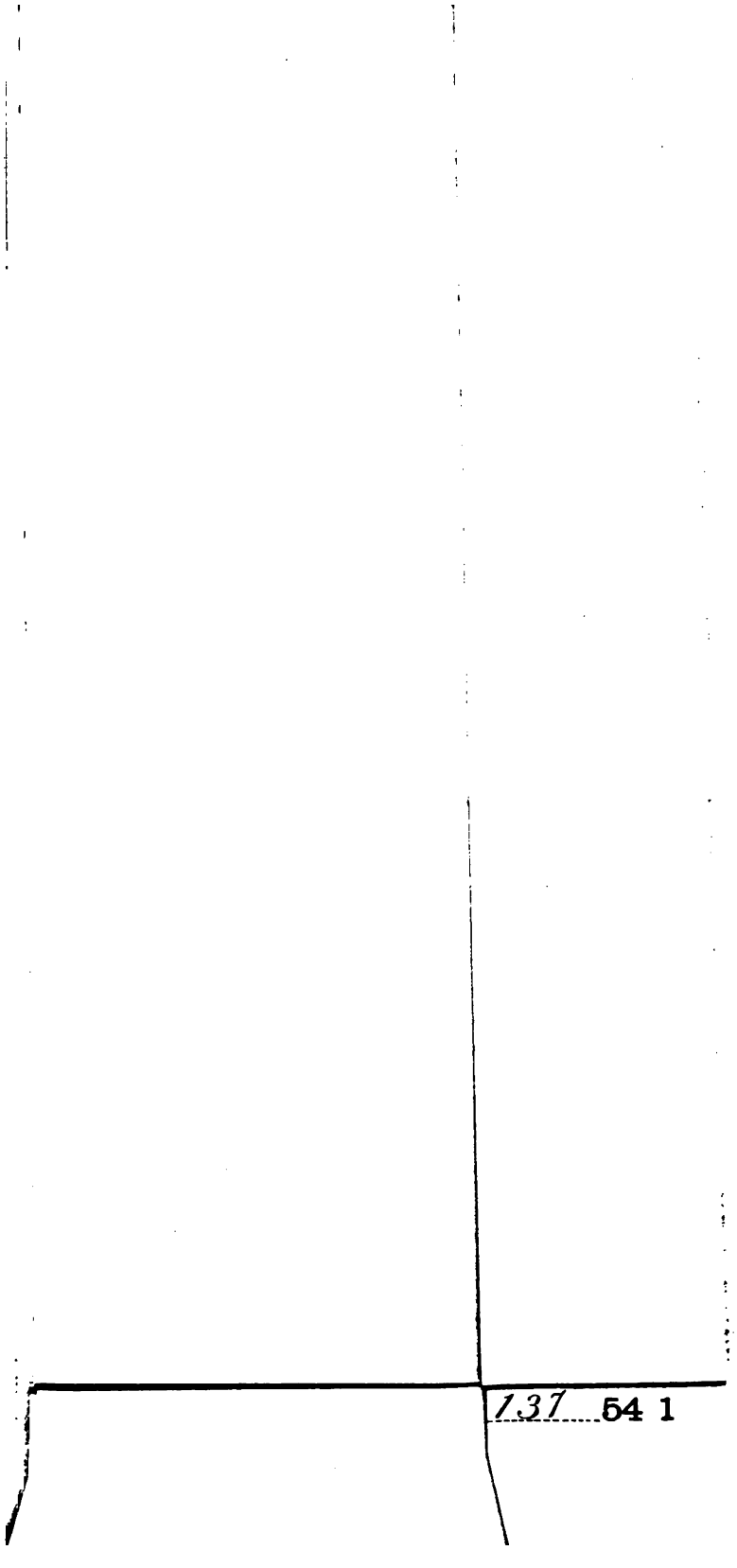

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Miscellaneous data showing positions where fur seals were taken by Canadian and American vessels in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER RATTLER (BERING SEA), NEILSEN, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Aug. 1	54 57	167 45	10	21	31
2	54 52	167 32	3	7	10
4	55 09	169 37	3	7	10

CANADIAN SCHOONER MAUD S. (BERING SEA), McKIEL, MASTER.

1895.	N.	W.			
Aug. 1	54 57	169 35	89	46	135
2	54 52	169 14	53	22	75
3	54 32	169 18	2	.....	2
4	54 46	169 35	32	21	53
7	55 13	169 01	1	.....	1
8	54 51	168 51	.....	1	1
9	54 48	169 39	10	16	26
10	55 58	169 21	35	88	123
11	54 57	169 20	64	95	159
12	54 43	168 55	23	12	35
Total	.....	.....	309	301	610

FUR SEALS OBSERVED BY THE AMERICAN WHALER OLGA (NORTH PACIFIC OCEAN), KNOWLES, MASTER.

Date.	Latitude.	Longitude.
1895.	N.	W.
Apr. 16	48 14	162 30
17	50 13	160 21
18	51 38	150 20
19	53 05	158 07
20	54 45	157 00

FROM A REPORT ON THE FUR-SEAL ROOKERIES OF THE PRIBILOF ISLANDS, 1895.

By F. W. True.

LETTER OF TRANSMITTAL.

U. S. Commission of Fish and Fisheries,
Office of the Commissioner,
Washington, February 4, 1896.

Sir: I have the honor to transmit herewith certain "extracts from a report relative to the natural history of the fur seals and the condition of the rookeries on the Pribilof Islands, Alaska, based upon observations made during the season of 1895 by F. W. True, curator of mammals, United States National Museum."

You will recall that Mr. True spent the summer of 1895 in making a study of the seal rookeries of the Pribilof Islands independently of Mr. C. H. Townsend. His final report, which will be taken up largely with a discussion of the natural history of the fur seal, will not be completed for some time, but in the preliminary account of his inquiries he covers fully all the main points of direct interest in connection with the present sealing controversy, so far as that subject came within the range of his observations. It is that part of his report which is now forwarded.

Very respectfully,

Herbert A. Gill,
Acting Commissioner.

The Secretary of the Treasury,
Washington, D. C.

DEAD PUPS.

The matter of dead pups is one which I can only discuss briefly, as the terrible mortality reported in recent years occurs late in the season, after the date on which my observations closed.

I saw a number of dead pups during my sojourn, but do not think that the total would exceed 150 for all the St. Paul rookeries. The largest number were at the north end of Tolstoi rookery, where I observed 70 in one small area and about 25 more a little farther south, on the 15th of August. The area referred to was occupied earlier in the season by a great mass of seals, and I regard the number of dead pups found here as representing the ordinary mortality of the young. These pups were

not in the water or at the water's edge or in positions where they could be supposed to have been cast up by storms.

On August 2 I counted 23 dead pups on Ketavie rookery. These were all on the higher parts of the rookery, and there were none at the water's edge. A few dead pups were found on the highest parts of several of the rookeries, and these, as Mr. Townsend suggested, were such as had been worried to death by the bachelors which hang about the rear of the rookeries. On several occasions I saw young bachelor seals snatch pups away from the pods on the higher parts of the rookeries, and badger them about as if they had been cows.

On Ketavie rookery, on July 27, I saw a youngish bull at the back of the rookery seize a pup out of one of the upper pods with his teeth and carry it up the hillside. He dropped it several times, but picked it up again. The pup presently bit at his assailant, and when the attention of the latter was distracted, ran away down the hill again. Another pup, apparently brought up the slope by this same bull, had crawled in under a rock, so that it could not be reached.

On August 5, on Ketavie, I saw a bachelor attempting to copulate with one of these pups. The instinct of reproduction seems to spring up at an early age in the seals, and hence these unnatural assaults on the pups. I agree with Mr. Townsend in thinking that a portion, at least, of the dead pups found high up on the rookeries are such as have been worried to death in the manner indicated. Some of these pups, however, are doubtless such as have wandered away from their mothers, beyond the confines of the rookery, and have died of starvation.

ESTIMATES OF NUMBER OF SEALS.

When Mr. Townsend arrived on St. Paul in July we endeavored to obtain data for an estimate of the number of seals present. With this in view we went to Ketavie, Lukannon, Tolstoi, and the Lagoon rookeries and made an actual count as far as the conditions would permit. As we proceeded it soon became apparent that to count all of the several classes of seals was impracticable. The first difficulty that we encountered lay in the fact that the roughness of the ground prevented us from seeing some of the harems distinctly, and we were unable to go down among the seals without stampeding them. Later we came upon the triangles or wedges of breeding seals massed as close together as it was possible for them to lie. It was necessary to use a field glass in investigating these groups, and as there were no salient points which could be picked out, as the count proceeded the eye soon became confused and the count lost. The larger groups of pups presented the same difficulty. This class was omitted later on, because on areas which had to be viewed from a distance so large a proportion of pups were concealed by the bowlders that the count could not be at all relied upon. We came eventually to count only the cows. At the Lagoon we counted by passing in front of the rookery in a boat, using a low-power glass. The harems were separated here by considerable intervals, and as the whole rookery was in plain view there was no obstacle to counting.

On Ketavie we counted without a glass for the most part, going down among the seals as best we could, and the same course was pursued at Lukannon and Tolstoi.

It can not be claimed that our count is mathematically accurate, but I believe that a sufficiently large area was covered to render the inaccuracy of comparatively little consequence. An actual census could be made only by driving all the seals inland and passing them in

review, or photographing the rookeries from overhead, both of which proceedings are impracticable.

The enumeration of cows on the Lagoon, made July 10, was by harems, as follows:

[The numbers indicate breeding females in each harem.]

8	7	28	20	15	20	67	1	1	16	8
1	10	1	9	16	8	18	4	20	31	2
41	14	7	1	22	4	1	16	2	41	1
16	3	23	38	1	2	10	18	6	3	25
16	3	4	32	31	4	25	2	19	1	26
24	2	37	20	4	6	9	48	14	19	16
4	21	15	12	35	7	12	23	16	39	4
26	4	67	24	5						

Total, 1,264.

The enumeration of cows on Ketavie, made July 8 to 10, beginning at the south, was as follows:

[The numbers indicate breeding females in each harem.]

1	21	1	47	29	1	38	12	15	22
1	9	145 (3)	1	9	17	16	1	9	19
12	23	10	2	13	4	3	50	1	24
3	12	9	2	29	4	10	8	1	18
3	9	93 (1)	52	64	5	11	10	25	21
4	4	12	10	1	1	5	24	35	36
35	1	20	29 (3)	12	40	11	17	15	28
10	28 (4)	1	9	5	9	1	5	19	8
28	13	60	11	45 (3)	14	2	7	75	34
8	6	21	13	8	14	10	1	10	52
25	2	2	2	15	29 (2)	13	30	42	43
34	5	14	14	30	19	47 (4)	23	49	13
3	22	15	0	7	4	10	12	16	8
55	89	32	60 (3)	18	1	9	17		

Total, 2,640.

NOTE.—The figures in parentheses refer to the number of bulls with the group of cows. In these cases several harems were of course consolidated.

Mr. Townsend made an enumeration of a portion of Lukannon rookery on July 12, and found 1,940 cows. The portion of this rookery on which he made no enumeration is sixteen one-hundredths of the total area of Ketavie and Lukannon, and it is necessary, therefore, to add 732 cows in making up the total for the two rookeries, which will then be 5,312 cows.

On July 11 I counted the cows on that portion of Tolstoi rookery under the cliffs at the south end, as follows:

[The numbers indicate breeding females in each harem.]

10	7	32	62	4	19	11	22	33	27
7	3	5	20	10	9	11	7	2	3
8	9	2	4	26	15	19	21	27	25
25	13	10	46	3	51 (2)	8	17	8	21
43	41	14	43	13	6	14	8	2	23
6	61	60 (3)	34	9	6	3	18	2	16
16	31	11	14	3	12	13	4	17	3
2	44	13	20	9	41	15	13	5	3
20	10	1	7	7	11	6	10	7	5
24	8	1	16	9	4	29	1	27	13
11	14	9	11						

Total, 1,624.

This portion of Tolstoi rookery is only a small part of the whole area, and the enumeration is chiefly valuable as a basis for ascertaining the average size of harems and for forming an estimate for the whole area.

The area of the several rookeries on St. Paul in July of the present year, as indicated on the maps made by Mr. C. H. Townsend, is shown below. I have divided the total area in the case of each rookery into two parts, on one of which the seals are distributed about as on the parts counted as regards density, and on the other are massed together. The areas are as follows:

	Not massed.	Massed.
	Square feet.	*Square feet.*
Upper Zapadnie	168,734	51,854
Lower Zapadnie	131,725	4,609
Tolstoi	160,580	80,229
Lagoon	82,241	.....
Reef	330,523	115,138
Ketavie and Lukannon	226,303	.....
Little Polavina	29,969	.....
Big Polavina	84,748	16,239
Northeast Point	378,240	361,462

Employing again Mr. Townsend's maps, I find that the 1,264 cows counted on the Lagoon rookery covered an area of 82,241 square feet, making the average occupied by each cow 65 square feet. The 4,110 cows counted on Ketavie and Lukannon rookeries covered 189,712 square feet, or 46 square feet for each cow.

On Tolstoi 1,520 cows occupied 44,699 square feet, or 29 square feet for each.

The average is as follows:

	Square feet.
Lagoon rookery	65
Ketavie and Lukannon rookeries	46
Tolstoi	29
Average	46

If we divide the number representing the total area of the rookeries on St. Paul by 46 we should find thereby the number of cows It happens, however, as already stated, that on certain portions of the rookeries the seals are massed together, and for these areas it has been decided to consider the average density as double that of the remaining parts, which would give us 23 square feet as the average area occupied by each cow.

The cows on the whole area of the Lagoon rookery having been counted, the number obtained by this enumeration will be included instead of an estimate, and the same course will be taken with Lukannon and Ketavie rookeries.

The result is as follows:

	Cows.
Lagoon rookery	1,264
Ketavie and Lukannon rookeries	5,312
Tolstoi, Reef, Little Polavina, Big Polavina, Northeast Point, Upper Zapadnie, and Lower Zapadnie rookeries	54,860
Total	61,436

On St. George, by the same method, we find the following:

Rookery.	Area.	Number of cows.
	Sq. feet.	
Zapadnie	128,171	2,786
Starry Arteel	64,329	1,398
North	128,868	2,800
Little East	24,254	527
East	67,884	1,476
Total	.....	8,987

The total for the two islands will be as follows:

	Cows.
St. Paul	61,436
St. George	8,987
Total	70,423

The number of breeding bulls, providing one for every 16 cows, as already determined, will be as follows:

	Bulls.
St. Paul	3,839
St. George	563
Total	4,402

ESTIMATE OF BACHELORS.

To count the bachelor seals on the hauling grounds is a much more difficult task than to count the breeding cows. The bachelors are much of the time in movement, going down to and returning from the water, fighting among themselves, etc. Furthermore, they lie pretty evenly distributed over the areas they occupy, rendering it extremely difficult to select a single point on which the eye can rest as the count proceeds. For these reasons a count of the bachelors is in most places practically impossible. But there are other difficulties as well. The bachelors at the water's edge and back of the rookeries are scattered and frequently in situations in which they can not be well seen. On the large hauling grounds the "drives" cause the number to rise and fall. Where there are a thousand to-day there will be only a hundred to-morrow. Under certain conditions of weather these young males resort to the land in great numbers, while under other conditions they remain in the water. All these disturbances and changes cause any direct count to be of little value.

The counting of the bachelors being deemed impracticable, it remains to consider whether an estimate of their number can be made. It is known by official count how many seals are killed during the season, and counts were also made by myself and by the assistant Treasury agent this year of the number rejected from the majority of the killings.

There is great confusion in the "pods" or little bands of seals when the killers attack them, and the seals rejected when once started often move off rapidly. Hence the enumeration of the rejected seals can not invariably be made with entire accuracy. Still, as I learned by recounting, the error is only slight, and not sufficient to affect the general result. We have then an exact count of the number killed and an approximately accurate account of those rejected. Upon ascertaining what relation the latter bears to the former we can determine

quite accurately how many seals are driven off the hauling grounds. The following table embodies these data for St. Paul Island:

Date.	Rookery.	Number killed.	Number rejected.	Percentage of rejected.	Total (estimated) of seals driven.
1895.				*Per cent.*	
June 20	Northeast Point	1,961	1,607	*a* 45	3,568
24	Reef	1,548	1,487	*a* 49	3,035
26	Halfway Point	575	575	50	1,150
July 1	English Bay	751	1,126	60	1,877
2	Zapadnie	861	1,405	*a* 62	2,266
3	Lukannon	364	647	64	1,011
9	Northeast Point	960	1,440	60	2,400
10	.....do	431	800	65	1,231
15	Reef	1,138	2,322	70	3,460
17	Halfway Point	324	793	71	1,117
19	Zapadnie	834	1,856	69	2,690
22	Northeast Point	827	2,236	73	3,063
27	Lukannon	286	931	76.5	1,217
Aug. 1	Reef (Zoltoi) only	185	704	79.2	889
	Total				28,974

a Estimated.

NOTE.—Some bachelors were killed before June 20, but the number was very small and will not affect the general estimate. These killings were as follows:

Date.	Rookery.	Number killed.
May 27	Northeast Point	6
28	Reef	79
June 1	Northeast Point	3
4	Reef	76
8	Northeast Point	3
13	Tolstoi	184
16	Northeast Point	2
	Total	353

The total number, 28,970, which represents quite accurately the number of seals driven from the hauling grounds during the season, would also represent the number of individual seals on those grounds during June and July, did not the rejected ones return to their place. As it is known, however, that many do so return—and may be considered probable that all those rejected return to one or other of the grounds—it is evident that in this total some seals are counted twice or three times. To find the correct total it will be necessary to make a reduction for those seals which appear in the drives more than once, and this is a most difficult matter on account of the complexity of the problem. Some facts indicated in the foregoing table are of interest in this connection.

It will be observed that the number of seals on each of the rookeries is practically the same at different parts of the season. This agrees with what appears to the eye to be true; that is, in a short time after the bachelors have been driven from a hauling ground there appear to be as many seals present again as there were at first. The numbers from the foregoing table are as follows:

Northeast Point:
- June 20 3,568
- July 8 (to 10) 3,631
- July 22 3,063

Reef:
- June 24 3,035
- July 15 3,460

Halfway Point:
- June 26 1,150
- July 17 1,117

apadnie:	
July 2	2,266
July 19	2,690
ukannon:	
July 3	1,011
July 27	1,217

Again, the proportion of seals rejected from the killing grounds ncreases gradually as the season advances. As shown by the table at he first killing I observed that 50 per cent of the seals driven up were ejected. This was on June 26. On August 1, the last killing of the eason, the per cent rejected was 79.2 of the whole number driven up. 'he increase in the proportion of rejected seals is reasonably regular. 'hat there should be such a proportional increase is of course to be xpected, but it appears to be a fact that the relative proportion of illable seals decreases as the season advances, whether a hauling round has been swept over previously or not. Thus, 50 per cent of he seals were rejected from the first drive from Polavina on June 26, nd 64 per cent from the first drive from Lukannon on July 3. Simiarly, we find that 73 per cent were rejected from a third drive from Iortheast Point on July 22, while 76.5 per cent were rejected from a econd drive from Lukannon, which took place five days later.

Another matter to receive attention before a general estimate is nade relates to the length of the period during which the bachelors re arriving at the island. My own observations are of no value in his connection, because, as the foregoing table shows, the two largest auling grounds at least were full before I arrived. It is necessary, herefore, to refer to the statement of other observers on this point.

Bryant, referring to the year 1869, states that "by the middle of June ll the males, except the great body of the yearlings, have arrived." N. A. Pinnipeds, p. 384.) The American Bering Sea commissioners, noting various observers, state that they "begin to arrive in the vicinty of the islands soon after the bulls have taken up their positions upon he rookeries, but the greater number appear toward the latter part of Iay." (United States, No. 6, Bering Sea Arbitration, p. 120.)

These statements are not so definite as could be desired, and I do not ind any others that are more so; but from the foregoing table it appears robable that while the hauling grounds fill up early in June, bachelors ontinue to arrive in greater or less numbers until August. If this is ot the case it is difficult to understand how so comparatively large umbers of killable seals can be found late in July.

Whether the seals return to the same hauling grounds as that from hich they are driven is perhaps of no great moment, as the net result ppears to be the same whether they do or do not.

Taking the six weeks in the foregoing table as the period during hich the hauling grounds are full, we can arrive at a conclusion egarding the number of bachelors in the following way:

The number killed between June 20 and August 1, as shown by the fficial count, is 11,045. Earlier in the year 353 were killed, making a otal of 11,398. To this amount is to be added the number rejected rom the first drives from each of the several hauling grounds, viz:

Iortheast Point	1,603
'he Reef	1,487
Ialfway Point	575
'nglish Bay	1,126
apadnie	1,405
ukannon	647
Total	8,843

We have then to find out how many new individuals were among the seals rejected from the subsequent drives. The proportion rejected from the first drive from Northeast Point was estimated as 45 per cent; from the second drive, 60 per cent and 65 per cent, or an average of 62.5 per cent; from the third drive, 73 per cent. The increase in the second and third drives is 17.5 and 28 per cent, respectively. These percentages we may take to be those of the new individuals.

We may make up the total, therefore, in the following manner:

Number killed June 20	1,961
Rejected June 20	1,607
Number killed July 9 and 10	1,391
Additional per cent rejected July 9 and 10	216
Number killed July 22	827
Additional per cent rejected July 22	413
Total	6,415

This may be taken as the number of seals on the hauling ground during the six weeks. Treating the other hauling grounds in the same manner, we have the following amounts:

Northeast Point	6,415
Reef	5,933
Halfway Point	1,692
English Bay	1,877
Zapadnie	3,551
Lukannon	1,581
Total	21,049

This, it will be observed, is considerably less than the number driven, viz, 28,970, but it represents, in my opinion, much more nearly the correct number of seals present on the hauling ground during the period.

This total, 21,049, is based on the assumption that all the bachelors have arrived by August 1. But as at the last killing, on that date, about 20 per cent of killable seals were still obtainable from the number driven up, it would appear that if killings were made later (at least up to the end of August) a small number of new seals would be obtained.

I calculate that this would not exceed 2,000 seals for all the hauling grounds. Adding this to the total previously obtained, we have 23,049 for the whole number of bachelor seals on the hauling grounds during the season. This includes only the grounds from which drives were made, and we have yet to consider the grounds at Ketavie and the Lagoon, which were not disturbed; also the areas back of the breeding grounds and the fringe at the water's edge. For the Ketavie hauling ground I estimate from my observations that the number should be about 500, for the Lagoon hauling ground 400.

For the areas back of the breeding grounds and the water front no reliable estimate can be made. These bachelors are constantly moving about, and were also more or less disturbed in some places this season, at least by persons passing to and fro. The bachelors at the water's edge doubtless go to the terminal hauling grounds, and may perhaps safely be regarded as already estimated for.

If one-tenth were added for these scattered bands of bachelors, it would probably be sufficient; but this is a purely nominal estimate.

To recapitulate, the total is made up as follows:

Number of seals killed May 27 to August 1	11,398
Additional seals on the hauling grounds from which drives are made	9,651
Seals on the hauling grounds from which drives are not made (Ketavie and Lagoon)	900
Number of seals in scattered bands back of the rookeries	2,195
Total	24,144

Bringing together the estimates for all the classes of seals, we have the following:

St. Paul:		
Bachelors	24,144	
Breeding bulls	3,839	
Cows	61,436	
Pups	46,077	
		135,496
St. George:		
Bachelors		
Breeding bulls	563	
Cows	8,987	
Pups	6,741	
		20,481
Total number of seals on both islands		155,977

In my judgment the foregoing estimate is fairly reliable; but it should be remembered that it is only an estimate. In a matter so extremely complex, and with factors so constantly varying, I do not think any estimate can be made which will approximate the truth more than somewhat remotely.

The chief use of such calculations in the present connection is, in my opinion, for the elimination of fanciful estimates of the number of seals. Thus, a statement that there are a million or half a million seals on the islands may safely be disregarded, as may equally any claim that there are but a few thousand remaining. It is probably as important to know how many seals are on any one or two of the rookeries as to know how many are on all of them, and this can be ascertained with fair accuracy, as shown by the enumerations of Ketavie and the Lagoon rookeries made this year. If it is found in July, 1897, that there are 3,000 cows on the Lagoon rookery, it may be fairly asserted that this rookery has doubled in two years.

PRESENT CONDITION OF THE ROOKERIES AS REGARDS THE DECREASE OF SEALS.

The three questions to which my attention was directed before visiting the islands as the most important ones for consideration are extremely difficult to answer. They relate to the present conditions as regards the decrease in the number of seals, the cause of the decrease, and the remedy. I realize now, perhaps even more fully than before I visited the islands, how difficult it will be to find a solution to these problems which will fill every need and meet every objection. Nevertheless, I address myself to the task, with the hope that what I have to offer may prove at least suggestive.

As regards the decrease in the number of seals, there is little to say. All persons who have visited the islands in recent years are agreed that a decrease has taken place, and I found no reason to dispute this conclusion. Being on the ground during only one season, I was unable of course to make comparative observations, but the condition of the rocks and herbage back of the present rookeries testifies in an unmistakable manner to the fact of their greater magnitude in past years. To take one instance: On the great inclined plain or "parade ground" on the reef, which is now covered with low grass and flowers, and from a little distance resembles a lawn of large extent, the cavities of the lava bowlders are filled with a dull felt-like substance, which upon examination proves to be composed chiefly of hairs of fur seals interwoven and matted down. This substance could not be made up from stray hairs

blown hither and thither by the wind, or from such as might be left by the passing seals during a drive. It betokens the former presence of numerous seals for a considerable period on ground now completely abandoned.

Wherever this matted hair is found abundantly the tops of the rocks are worn smooth, a condition due clearly to the presence at some time of living seals.

At the back of all the rookeries, often for a distance of 200 to 300 feet or still more, this phenomenon is observable, and even among the high grass farther back, where the rocks are abundantly covered with lichens, a careful examination reveals the presence of matted hair, though usually in a friable and decomposed condition.

On the Reef "parade ground" I examined an area about 50 feet square, which, according to photographs taken by the commission in 1891, was completely bare in that year, and found that it was fully one-half covered with grass and flowering plants. This indicates that some of the changes at least are of very recent origin, and can in nowise be regarded as ancient.

Such facts as I have mentioned demonstrate that at no distant time in the past the seals covered much more ground than they did this year.

Of the changes which have taken place since last year I can not speak entirely from personal experience. For a knowledge of the conditions in 1894 I have relied on the photographs and charts prepared by Mr. Townsend, naturalist of the *Albatross*. These charts and photographs for 1894 I examined to some extent while on the ground this summer, and more in detail since returning to Washington. In the latter instance I have had the advantage of comparing, side by side in company with Mr. Townsend, those of 1894 with those of 1895.

The work this year was done about ten days later than last, on account of the backwardness of the season. Making all allowances for seasonal and other influences, I have no hesitation in affirming that the seals were considerably less abundant this year than last.

As already explained, the photographs were made under conditions unfavorable in many ways, and some of them are not serviceable for comparison. In others the shrinkage of the rookeries is very noticeable and should be evident to untrained eyes. This is true of the views from stations 1, 4, and 5, Northeast Point; stations 21 and 24, Polavina; station 12, Lukannon; stations 14, 14½, and 15, Ketavie; stations 16, 17, and 18, Reef; station 11 and Station F, Tolstoi; station 7*, Lower Zapadnie; station, 2 North rookery (St. George), and Station B, Little East rookery (St. George). The changes which are observable result chiefly from a recession from areas of the rookeries, or a general shrinkage along the inland borders. Accompanying these changes is a tendency in breeding grounds, formerly of great continuous length, to break up into detached areas. This is very noticeable at Northeast Point, Polavina, and Lower Zapadnie, St. Paul, and Great East, North, and Zapadnie rookeries, St. George, and may be observed both in the photographs and charts of 1895, when compared with those of 1894. As Mr. Townsend informs me that he will report on these changes in detail, and as the photographs and charts are his own work, and furthermore, as his experience runs back over many seasons, I do not deem it important to enter more into details here. I agree with Mr. Townsend that a noticeable shrinkage of the breeding grounds has taken place since 1894. I regard the herds as in a very precarious condition as regards preservation, and while it is obviously impossible to fix limits in such a case, if the off-shore sealing operations continue as at present I should expect to see the cows practically exterminated in less than five years.

CAUSE OF THE DECREASE OF SEALS.

It has been generally conceded that the decrease of the seals is due to human interference, and in view of the many known cases of extermination by human agency there is no reason for dissent from this opinion. When we go a step further, however, and inquire what special form of interference is responsible for the results observed, we are met at once by diversity of opinion. Men have located and carried on the ordinary operations of life on the seal islands. They have killed seals on the islands. They have intruded upon the resorts of the seals and driven off certain classes of these animals. They have killed mature males and young on land, and both males and nursing and pregnant females at sea. Some of these operations ceased many years ago, and others are still carried on. Out of all these factors of destruction, old and new, we are called upon to select the one or ones which are responsible for the effects observed, and with whose cessation the decrease would likewise cease. In the present state of knowledge I conceive that this can not be done in such a manner as to place the matter beyond dispute. Conclusions have to be based largely on opinions, rather than on facts, and as long as these opinions can be challenged the conclusions will fail to receive universal acceptance.

Putting aside the effects of all past forms of interference, however, as intangible, we know what operations are going on to-day and what is the condition of the seal herds. We know that the seals of all classes have greatly decreased in number and have shown that the decrease is still going on. We know that considerable numbers of male and of nursing and pregnant female seals are killed at sea, and that considerable numbers of male seals are killed on land. Now, whether few or many males remain is of no consequence, so long as there are enough to fertilize the females.

My observations during the past summer show that there are enough, and that they are desirous of taking part in reproduction. If this is not true, why are there always males hovering about the water's edge and attempting to intercept the females as they leave the rookeries? Why are there small harems at the water's edge (and even in the water) which are constantly being broken up by the stronger bulls near by? Why are there new harems formed at the back of the rookeries (the cows with pups) at the close of the season? Why are the pups harassed? If there were not enough bulls to fertilize the females, or if the bulls lacked vigor, none of these things would occur. But they do occur, as I witnessed with my own eyes. Hence, I do not hesitate to state that, in my opinion, the number of bulls is sufficient for present purposes of reproduction, and that the bulls are virile. It is not to be inferred, however, that the number of males has not decreased. This is conceded, but, as already stated, the fact is of no interest in the present connection if enough remain.

When we turn to consider the female seals, we find that the question assumes a very different aspect. It is useless to inquire whether there are enough females. Even if the islands of St. Paul and St. George were covered completely with female seals, there still would not be too many, provided there were males enough to fertilize them. When, however, we find the females decreasing year by year, there is every cause for alarm. Taking the condition regarding males as they are to-day, the question we are considering resolves itself to this: What is the cause of the decrease of female seals? If we can not find a cause

which will be accepted by the unwilling as the sole cause, we can at least point to one which everyone must admit demands serious consideration. We have the sworn testimony of the Treasury agents of the islands that they counted this fall on St. Paul 23,000 dead pups. Every unbiased observer is convinced that the cows suckle only their own offspring; hence, unless these pups died of natural causes, it is certain that 23,000 cows were destroyed at sea. That a large number of cows were destroyed by sealers we know from the investigations of the commission, and we know, also, that the pups were in such positions and condition as to indicate clearly that they died of starvation. Is there any reason to look elsewhere for the cause of the decrease of the females? Certainly not.

Now, whether this is the only cause of the decrease of females or not is of no great moment, since, in its operation, it is a sufficient one to depopulate the rookeries. He would be regarded a very foolish man who should spend time and money in investigating obscure causes of the loss of his fowl while the fox was openly stealing hens from the roost. So long as a sufficient cause of destruction is discovered, it is of no practical importance to search for others, since if this one continues to operate it will destroy the rookeries, whether other causes are discovered and eradicated or not.

As it was a part of my instructions to search for obscure deleterious agencies, however, I will say that I kept the matter constantly in mind, but was unable to discover anything of importance. The seals appeared to be healthy and vigorous. I did not see more than five adult dead seals about the rookeries during my sojourn on St. Paul. These were all males. Mr. Townsend informed me of the presence of a dead female on Ketavie rookery, but I did not see it myself. It may be said that there is no mortality of females on the islands before the pelagic sealing begins, as there certainly would be if the seals were in anywise diseased.

No recognized enemies were observed about the islands, with the exception of two killer whales. These I observed for a short time in front of Ketavie rookery, but they appeared only once. The imperfections which one finds among the seals are all such as have their origin in wounds received during combats or result from falling or jumping from high places on rocky ground.

REMEDIES FOR THE DECREASE.

If it be true that the present shrinkage of the rookeries is due to human interference, as I believe it is, the simplest and most effectual remedy would, of course, consist in stopping for a term of years all sealing operations of whatever character and wherever prosecuted. It is certain that no harm could result to the seal herds from this proceeding, and even if the proposition that the decrease is due to human interference should not be sustained (improbable as that may be), the experiment would be worth all it might cost. It may be deemed, perhaps, that the application of this remedy is impracticable for reasons of state, as well as on account of the injustice to those persons who have money invested in apparatus of the fishery. If the present international situation is such that no change covering the whole fishery can be made, it is useless to consider the subject of direct remedies.

It is not within my province to decide whether such a cessation of all sealing operations can or can not be brought about. Taking it for granted that it can not, I may mention two plans, in the nature of indirect remedies, which seem to me worthy of consideration. One of these

at least has occurred to other investigators, but whether prior to my own studies I can not say.

It appears to me entirely feasible to brand the seals with a property mark. If the cows are to be so treated, it would be best to place the brand on the back, where it could be plainly seen. This would also have the effect of rendering the skins of the cows unmarketable, and there would be no object in destroying them.

It is, of course, taken for granted in proposing this plan that property so branded would be recognized as property on the high seas. Whether this would be the case I can not venture to decide.[1]

KILLING OF FEMALES BY THE GOVERNMENT OBJECTIONABLE

In conclusion, it may be proper for me to remark that I should deprecate most earnestly the adoption of any plan to bring the fur-seal question to an end by a wholesale butchery of all the seals, male, female, and young, on the Pribilof Islands. I do not think that our Government or any other could maintain its dignity while pursuing such a course. It could only be regarded as a work of spite, which would be unbecoming in an individual and much more so in a nation.

No one having the smallest spark of love for nature and her works who had visited the fur-seal islands could for an instant entertain a proposition for the slaughter of the seal herds. To any such it would seem little less than wholesale murder.

Putting sentiment aside, it does not seem to me that such a course is necessary. Even if the patrol of Bering Sea is suspended and sealers are allowed to approach the islands, the time will speedily come when sealing as an industry will cease to be profitable and will be abandoned. There will still be a remnant of seals which, unmolested, will increase and once more cover the breeding grounds. In the interval there would be time for the cultivation of public sentiment in this country and Europe favorable to the preservation of the seals, and to arrange plans of international protection.

On the other hand, if the breeding seals are slaughtered on the rookeries, one more species will be added to the already formidable list of those which have been exterminated by unwise and improvident human action. Such a proceeding would be in the highest sense immoral, and no less inconsistent with the true aims of a civilized nation.

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[1] Mr. True suggests further in respect to this subject that, in case of the presence of pelagic sealers in Bering Sea next season, the entire body of seals might be driven back from the rookeries and retained in the inland lakes and lagoons for about six weeks, or during the period when pelagic sealing is mainly carried on in that region. The execution of such a plan is entirely practicable with regard to all grown seals of both sexes, but it would result in the destruction of the pups born that season. If, however, the seals were held inland for only three or four weeks, the majority of the pups would probably be saved, as they could exist for that length of time without feeding, while the retention on land of the grown seals, even for so short a space of time, would undoubtedly cause the abandonment of nearly all pelagic sealing.

OBSERVATIONS DURING A CRUISE ON THE SEALING SCHOONER LOUIS OLSEN, AUGUST, 1894.

By A. B. ALEXANDER.

LETTER OF TRANSMITTAL.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., January 5, 1895.

SIR: In response to your request of the 3d instant for copies of the reports for 1892, 1893, and 1894 of Mr. Townsend on the seal rookeries of Alaska, and the report for 1894 of Mr. Alexander on pelagic sealing, I beg to state that no report on the condition of the seal rookeries in 1892 was made by Mr. Townsend, the subject having received the attention of Mr. J. Stanley-Brown, a special agent of the Treasury Department. Mr. Townsend's report for 1893 was transmitted to the Secretary of the Treasury on February 26, 1894, and a second copy, as also Mr. Townsend's preliminary report covering the work of 1894, to the Assistant Secretary, Mr. Hamlin, on December 4 and 5, 1894. Herewith I have the honor to forward copy of the report of Mr. Alexander covering his observations during the summer of 1894 on pelagic sealing.

Very respectfully,

HERBERT A. GILL,
Acting Commissioner.

Hon. C. S. HAMLIN,
Acting Secretary of the Treasury.

CRUISE OF THE LOUIS OLSEN IN BERING SEA.

On May 28, 1894, I left Seattle, Wash., in the *City of Topeka* for Sitka, and from there took passage in the *Crescent City* for Unalaska. Soon after arriving at the latter place I joined the *Albatross* and remained by her until the evening of the 29th of July, when I joined the pelagic sealing schooner *Louis Olsen*, of Astoria, Oreg., Captain Guillams, master, who very willingly gave me passage for the purpose of making observations on the seals taken by him during the open season in Bering Sea.

The next day, in latitude 54° 38′ north, longitude 167° 04′ west, we saw our first seals, 20 in number, 12 of which were "sleepers." In the afternoon we saw 6 seals about a half mile from the vessel playing in a bunch of seaweed. The sea at the time was perfectly smooth, with a light air stirring. Two hunters and myself started out in a boat to

watch them and see how near we could approach without disturbing them. We soon learned that they were unusually tame, as we approached near enough to touch one with a spear pole. They showed little signs of fear notwithstanding that we were within 30 feet of them for fully five minutes. Diving under the seaweed and suddenly thrusting their heads up through it seemed to afford them great pleasure. They paid but little attention to us and seemed almost indifferent as to how near we approached, so long as we did so quietly. This caused the hunters to exclaim several times, "If we only had a gun we could kill them all." Under the circumstances it was but natural that the thought of a gun should be uppermost in their minds. Early in the spring, both on the Northwest coast and off the coast of Japan, seals are sometimes found which evince little signs of fear, but after one day's shooting on the ground they become very wild and mistrustful, and, like a crow and some land animals, seem to scent a gun in the air.

The following day, July 31, seals were plentiful. The wind being light during the previous night, our position had changed but little.

On August 1, at a very early hour, the spears were brought forth and the seal on them broken. While this was going on many remarks were made in regard to the first day's trial. Some of the hunters were already discouraged, and were confident that they were only wasting time by attempting to use spears. The thought of being obliged to adopt the primitive weapon of the Indian was indeed humiliating to them. A few on board felt more hopeful and were willing to give the spear a fair trial. Ever since leaving Unalaska the hunters had been practicing at throwing the spear pole. Every piece of floating seaweed or other object which came within range had been a target. On several occasions the boats had been lowered and a supply of chips and small pieces of wood taken along. These were thrown ahead of the boat as targets to throw at. It was soon found that an object that could be readily hit at a distance of 25 or 30 feet from the vessel was not so easily reached from a boat, as the smallest wave would cause the latter to move just enough to make the pole go wide of its mark. A day's practice in throwing from the boats had the effect of teaching the hunters the various ways of holding the spear to make more sure of its hitting the mark under the many conditions of sea and wind. All this time spear throwing had been carried on with lifeless objects for a mark. The opportunity was about to present itself of exhibiting skill in throwing at something which, if missed the first time, would not be likely to remain stationary long enough to give the marksman another trial. A cool head and steady nerves would be the special requirements to insure a successful day's hunt should seals be plentiful.

The first day of August did not prove a success so far as sealing was concerned, the weather being too foggy to send out the boats. Scattering seals were observed all day, but they were all "travelers"; that is, they were all moving in various directions. Our noon position was latitude 56° 11′ north, longitude 172° 01′ west. The next day seals were less numerous. None were observed in the forenoon; in the afternoon 12 were seen, of which all but 1 were traveling to the westward. This individual was asleep; a boat was quickly lowered and the hunter on watch was rowed toward it. Before the boat had covered half the distance the seal showed signs of waking and shortly after becoming aware of approaching danger it disappeared. Our noon position on this day was latitude 57° 21′ north, longitude 173° 46′ west. Seals here were *not so* plentiful as they were farther south. In the afternoon we hove *to and* caught 2 cod in 65 fathoms of water. No more seal life was

observed until the afternoon of the following day, when 2 sleeping seals were sighted in latitude 57° 50′ north, longtitude 173° 48′ west. Five boats were sent out. They returned at 5 p. m., having taken no seals, although 8 had been seen, but they were all "travelers." Heavy fog and strong indications of the wind breezing up fresh caused the boats to return earlier than they otherwise would. In the evening, the vessel being hove to, several seals came close alongside. They seemed to be very curious to know what we were. All the spears on board were repeatedly thrown at them, but they had the good sense to keep just out of range. Whistling had the effect of enticing them close aboard, but the sight of a spear or two being aimed at them would cause them, without any apparent effort, to increase their distance by 20 or more feet.

The first seal captured by the *Olsen* was on August 4 in latitude 57° 50′ north, longitude 173° 48′ west, the same position recorded on the previous day. At 8.45 a. m. sail was made and at 10.45 the boats were lowered, 2 "sleepers" having been seen. The weather being foggy the boats were soon lost to sight. The vessel was hove to, it being much easier for the boats to keep the bearing of the vessel than for the vessel to keep track of the boats.

As soon as the boats had left, a hand line was put over in 70 fathoms of water. An hour's fishing resulted in 18 cod, the average weight of which was about 12 pounds; the largest weighed not far from 30 pounds. All but 2 of the cod were in a healthy condition; these 2 had sores on their backs about the size of a half dollar, which had eaten nearly to the back bone. This instance is especially mentioned on account of the position of the sores. In both cases they were situated near the neck directly over the vertebra; they were as round and smooth as if cut with a knife.

Notwithstanding that the fog did not lift during the day, the boats remained out until 9 p. m. The result of the day's hunt was 12 seals, 4 males and 8 females. One of the seals had previously been speared in one of its flippers, as it was nearly severed from its body, showing that the seal must have had a hard struggle to free itself. The largest number of seals was taken by two boats, each bringing in 5; two other boats captured 1 each, and the remaining two boats brought in nothing. About 50 seals had been observed from the boats, the most of which were awake. Only an occasional individual had been noticed during the day from the vessel, the fog being too dense to see more than an eighth of a mile. In no instance was the first seal thrown at captured, and it was only after repeated attempts by each hunter that one was hit. The excitement produced by the desire of each hunter to be the first to capture a seal, combined with the inexperience of throwing the primitive weapon, was no doubt the chief cause of the poor results. The 8 females captured were all nursing seals; but little food was found in their stomachs, and that was too much digested to determine its character.

On the 5th the wind and weather were not suitable for sealing, a very fresh southeast wind prevailing, and in order to keep our position the vessel was hove to under easy sail. A large number of seals was noticed. They apparently had no fixed course, but would swim in one direction a half a mile or so, and then turn and go in an opposite way. The wind continued fresh, with a rough, choppy sea until the following noon, when the fog which had come in during the night lifted and the wind suddenly subsided into a calm. The boats were put in readiness and sent out for an afternoon's hunt. Considering the state of the sea

and the time of starting, a fair afternoon's work was done, 19 seals being landed on deck by 8.30 p. m. Fifteen of the number were females and 4 males. Only 6 had food in their stomachs. Every hunter reported seals numerous, about half of the number being asleep. They slept in bunches of 6 and 8, and when aroused from their slumber were very tame, but owing to the inexperience of the hunters with spears in a comparatively rough sea, the successful throws were few and far between. Had the hunters been provided with shotguns, instead of spears, it is safe to say that a hundred or more seals would have been nearer the day's catch. During the absence of the boats a large number of traveling seals had been seen from the vessel, and also an occasional "sleeper." One of the latter was observed close aboard a little on our lee. It evidently was sleeping soundly, for neither the slatting of the sails nor the blowing of the fog horn had the effect of awakening it, and it was only when the scent of the vessel reached it that it showed signs of life. After being fully aroused it did not exhibit any great signs of alarm, but played about not far off for sometime. It seldom happens that a seal will show such indifference to its surroundings as this one. The captain and mate said they had never in all their experience seen a seal so tame. The general opinion on board was that it was due to there being no firearms used or hunting allowed in Bering Sea for the past few years that caused the seals thus far observed to show so little fear of man.

The largest catch during any one day was taken on August 7. The day commenced with a gentle breeze from the south and a smooth sea. A light fog hung low over the water, which prevented the boats from being seen more than 20 yards. At 8 a. m. the last boat shoved off, and they did not appear again until evening. The noon position of the vessel was latitude 58° 30′ north, longitude 173° 56′ west. In the forenoon hand-line fishing was carried on. The depth of water here was 60 fathoms. Six good-sized cod were caught in quick succession; 2 males and 4 females. Their stomachs were well filled with food. In the stomach of a large female was found an octopus which had recently been swallowed, as its skin showed no discoloration. Cod were abundant, and we could have filled the decks in a day's fishing with a single line. Their abundance may have been the cause of seals being plentiful in this region. In the evening the boats all returned nearly at the same time, bringing in 34 seals, 30 of which were females. Twenty-four of the number had food in their stomachs. The material, however, was finely masticated and hard to identify, but a portion of it looked very much like the flesh of cod. If this supposition is correct, the question arises, Did the seals dive to the bottom in 60 fathoms and bring their prey to the surface? As a rule cod are found very close to the bottom, especially in deep water, and it is not probable that they were at or near the surface here. The most satisfactory evidence the writer ever had that seals are deep divers was obtained two years ago on the Fairweather Ground, a large bank off the coast of Alaska, while on a cruise in the revenue cutter *Corwin*. We were about to return to the ship, at the end of a successful afternoon's hunt, when a large male seal suddenly came up close to our canoe—not over 30 feet away—with a very large red rockfish in its mouth, which it immediately proceeded to devour. The fish was alive, and could plainly be seen struggling in the seal's mouth. Our position at the time was some 75 or 80 miles offshore from Yakutat Bay. We had no means of ascertaining the depth of water, but it could not have been much less than 100 fathoms. The red rockfish, like the cod, also generally swims close to the bottom,

although it may possibly sometimes feed near the surface. The writer does not maintain that seals can go to the bottom in 100 fathoms, but he does believe that they can dive much deeper than is generally supposed.

All the hunters on this day reported seals plentiful, but could find very few asleep. Had the sun been shining it is safe to say that the majority of those with food in their stomachs would have slept during the greater part of the day, for as a rule seals with full stomachs sleep when the sun is out, the air warm, and the sea smooth, or comparatively so. Their time of sleeping, however, is not always when conditions are favorable, for after a gale of long duration they are frequently seen asleep when the air is cold and the sea uncommonly high, at such times being completely exhausted. It is not an infrequent sight during the winter and spring months, at the end of a long and heavy gale, to see seals sleeping soundly in a snow storm, the exposed portion of their body being covered with snow. In consequence of the seals being restless on this day, a great many of the 34 taken were what is known to sealers as "finners," that is, about half asleep, rolling about and scratching themselves. Sometimes "finners" are hard to approach, and at other times very easy. A restless one will try very hard to take a nap, but just as he gets comfortably fixed something disturbs him, and holding his head up he will take a look all around as if danger were scented. They are then difficult to spear.

Indians seldom pay any attention to moving seals when hunting with spears; they think it a waste of time. White hunters, when they can find no sleeping seals, frequently give chase to "finners" and "travelers," and in many cases are rewarded for their trouble. The hunters on the *Olsen* soon found that few seals could be taken on certain days if they only selected sleeping ones. Many haphazard throws were made at swimming and finning seals, the majority of which were failures, but enough good shots were made to make the experiment a paying one.

For several days seals had been observed chasing some kind of fish, and during this last day's hunt they were quite plentiful. Only a single individual would be seen; it would dart first in one direction and then in another, and occasionally would make a desperate leap out of the water. Presently a seal would be noticed not far off swimming as rapidly and in as many different directions as the fish. On the day in question 2 seals were speared just as they came to the surface, each with one of these fish in its mouth. The seals did not relinquish their hold when speared, but kept a firm grip until knocked on the head. The fish proved to be Alaskan pollock. Both of the seals were large males, one probably between 8 and 10 years old.

The two following days, August 8 and 9, the weather was too boisterous for sealing; wind southeast and every indication of a gale. We lay to under the foresail in order to keep as near our position as possible. A heavy sea set in from the westward, but the wind did not increase above a strong breeze. Scattering seals were about each day, all traveling to the westward. From observation we learned that during stormy weather seals traveled in an opposite direction to the wind. In a gale they are far more numerous on the lee side of the Pribilof Islands than to the windward of them. When the wind is heavy and the sea rough seals as a rule travel from the seal islands directly to leeward or nearly so. Just how much the wind changes the course of the main body of seals would be hard to say, but so far as our investigations extended, in connection with the traveling herd which came under our notice, we are inclined to think that seals within 100 miles of the seal islands bound to the feeding grounds will, in most cases,

seek the grounds to the leeward of the group. Seals in a gale take every advantage of wind and sea; it is necessary that they should, for there is evidently a limit to their endurance.

On the morning of the 10th light winds prevailed, but a choppy sea, combined with a long, rolling swell from the west southwest, rendered it unfit for sealing, although scattering seals had been noticed. Two days of idleness had made everybody on board anxious to get out in the boats. In the afternoon the wind fell to a calm, and the boats were put over in latitude 58° 27′ north, longitude 172° 46′ west, and remained out until evening, bringing in only 3 seals. Very few were seen from the boats, although they covered considerable ground during the day. Seals were equally scarce in the vicinity of the vessel, only 6 being observed. One of these, more bold than the others, kept circling around the vessel, coming nearer each time. Finding that it was inclined to be inquisitive its approach was encouraged by continual whistling by those on board. It was finally enticed alongside and captured, the spear passing through one of its hind flippers. It fought bravely for life while in the water, but on being hauled on board its power was greatly lessened. It did not, however, give up without a desperate struggle to regain its liberty. At one period of the fight it drove everybody from the main deck, and it was only when a noose was thrown over its neck and its head hauled down to a ring bolt that it was mastered and could be knocked upon the head. The catch of seals for the day was 4, 3 females and 1 male. The total catch to date had been 69, 13 males and 56 females.

The next day, August 11, the boats made an early start. Everything looked favorable for a good day's hunt, the wind being light and the sea smooth—two things which are almost indispensable in seal hunting. No seals had been noticed during the morning, but it does not necessarily follow that because none are observed from the vessel they are not about, for it frequently happens that good catches are made under those circumstances. This was not one of those exceptional days, however, the catch amounting to only 13—3 males and 10 females. Seals had been comparatively plentiful, but were not inclined to sleep and were too wild to approach. A piece of an Alaskan pollock taken from a seal's mouth was brought in by one of the hunters. A series of trials was made for bottom fish, but with negative results; we seemed to be drifting over barren ground. The noon position on this day was 57° 42′ 38″ north latitude, 172° 52′ west longitude.

Our pleasant weather was about to be broken for a considerable length of time, for the 12th began with a gale from the southeast, accompanied by a heavy sea. We lay hove to under single-reefed foresail and trysail. In the afternoon spoke with the schooner *Teresa*, of San Francisco; also saw the schooner *Kate*, of Victoria, British Columbia, a short distance away. Seals were frequently seen all through the day. In the early part of the night the wind increased to a heavy gale, but in the latter part it decreased in force and hauled to the west-southwest. A heavy sea kept up all day. In the forenoon a vessel was sighted low on the horizon. An occasional seal was observed.

On August 14 the weather was pleasant, but the wind fresh from the westward. In the evening we boarded the schooner *Fawn*, of Victoria, British Columbia, which reported losing a boat and three men on the 11th, but they were afterwards picked up. The *Fawn* had an Indian crew and had taken 20 skins in Bering Sea. This news gave our hunters considerable encouragement. The noon position was latitude 57° 37′ north, longitude 173° 14′ west.

August 15 was marked with pleasant weather in the early part of the day, becoming very squally in the latter part, with rough sea. Noon position, latitude 57° 11′ north, longitude 173° 09′ west.

On August 16 we had variable weather; clear in the morning, thick and squally in the afternoon, with very rough sea. But few seals were seen. The noon position of the ship was latitude 57° 04′ north, longitude 172° 30′ west.

At 7 a. m. August 17 made sail and ran to the southward; wind northwest and fresh, gradually decreasing to a light breeze in afternoon. A heavy fog came in later in the day. Noon position, latitude 56° 54′ north, longitude 172° 45′ west. We continued on our course until 8 a. m. the next day, when we saw a seal "finning" close by. A boat was quickly manned and started in pursuit, but the seal was on the alert and escaped. Shortly after this a "sleeper" was noticed not far off on the weather bow. Another boat was hoisted out and rowed quietly toward it, no attempt being made to throw the spear until within 20 feet. It was easily captured. Its stomach was found to be well filled with food, which was no doubt the cause of its sleeping so soundly.

Later in the day all the boats went out, but returned at the end of three hours with only one seal. The sea was smooth, with little wind stirring, but the air grew suddenly chilly and the sky very cloudy, which practically put an end to the chances of seals sleeping for the day. The hunters claimed that had they been provided with guns the day's catch would have been at least 60 or 70 seals. On a day like this when seals showed no inclination to sleep shotguns in the hands of skillful hunters would have done very destructive work. In the early days of pelagic sealing the hunters sought sleeping seals only, but they have learned the movements of the seal so thoroughly that "travelers" and "finners" are almost as readily taken as sleeping ones.

Hand-line fishing was carried on from the vessel in 60 fathoms of water. In one hour 10 cod were caught, their average weight being about 9 pounds. It was estimated that the largest weighed 30 pounds, the smallest 4 pounds. In their stomachs were found small starfish, prawns, squid, medusæ, and a quantity of decomposed fish.

Unfortunately, this was our last day's hunt, as from this time on we had stormy weather and heavy gales. Eighty-four seals had been taken—16 males and 68 females. All the females were nursing cows except one, which was a yearling. The last seal caught by the *Olsen* was taken in latitude 56° 05′ north, longitude 172° 17′ west.

Early in the morning of August 19 the weather was pleasant, with indications of a suitable day for sealing, but shortly after the wind began to freshen from the southeast, gradually increasing in force and hauling to the westward. We lay to under a double-reefed foresail, encountering heavy squalls at times. Our noon position was latitude 55° 39′ north, longitude 172° 12′ west.

On August 20 there was a heavy gale from the northwest and a very high sea running. We ran before the wind for three hours hoping to escape the heaviest part of it, but no perceptible difference was felt. We then lay hove to until 10 p. m., at which time we again kept off before the wind, and ran until 10 a. m. the next day. About this time we saw several seals, and soon after ran close to a bunch containing five, all huddled together. It was evident that they were well tired out, or else they would not have been asleep in such weather. Our noon position was latitude 54° 38′ north, longitude 168° 01′ west. In the afternoon we sighted several vessels.

On the 22d we bore away for Unimak Pass, the wind north-north-

west and blowing a gale, followed by a heavy sea. On the morning of the 23d sighted the lower part of Akutan Island, the top of which was enveloped in a heavy fog. All through the day seals were plentiful, and many of them asleep. During the past few days enough seals had been seen to induce a vessel to lay by and wait until the weather should moderate, but the captain thought bad weather had set in for the fall, and accordingly had made up his mind to go home. He made a mistake in so deciding, for after we had left and were on our way home good catches were made by all the vessels that remained.

At 6 o'clock in the evening we had left Unimak Pass behind us and were standing on an east by south course. The next day, when about 75 miles from the pass, saw a sleeping seal, and 10 miles farther on saw two more. When about 200 miles off shore salmon were noticed jumping. They were so near that we could hardly mistake the species. Whales were also plentiful. For the first two or three days after leaving Bering Sea the weather was pleasant, but during the greater part of the voyage home heavy gales from the westward prevailed. On the evening of September 6 we arrived at Victoria, having been twelve days on the voyage home.

The writer was very kindly treated by the captain, officers, and crew of the *Olsen*, who did everything in their power to forward his inquiries. Had the *Olsen* encountered the favorable conditions which many of the vessels did, much more extensive and important observations could have been made. It was subsequently learned that during the time we were having exceedingly stormy weather, often hove to in a gale, many vessels of the fleet operating several degrees farther south were having pleasant weather and making good catches every day.

SYNOPSIS OF THE SEALING CRUISE OF THE LOUIS OLSEN ON THE JAPAN COAST IN 1894.

The schooner *Louis Olsen*, of Astoria, sailed on a sealing voyage, bound for the coast of Japan, January 1, 1894. Like the majority of sealers intending to hunt on that coast, she made a southern passage, going to the southward of the Sandwich Islands and close to the Bonin Islands. Sealers frequently call at the latter group for water and make such repairs as may be needed. These islands are situated not far from the sealing ground where seals are taken early in the spring.

The boats were lowered for the first time on March 12. The next day and the following one 74 seals were taken. On the 16th a heavy gale from the southeast came on, but subsided on the 17th, when hunting was resumed.

On March 22, in latitude 37° 44′ north, longitude 144° 02′ east, a schooner was sighted bottom up, which proved to be the sealing schooner *Mascot*. She was afterwards seen by other vessels, and attempts were made to cut through her side and secure the skins, of which, it was understood, there were about 500 in her hold, but without success.

It had been noticed that the current was very strong and very irregular, making it difficult to trace the vessel's track by dead reckoning. On the 25th a clear sky afforded the opportunity for a good observation, and it was found that the current had carried the vessel 75 miles to the north-northeast, although she had been headed southwest by south. An irregularity in the currents was subsequently noticed on all parts of the coast visited.

On March 26, in latitude 38° 39′ north, longitude 144° 27′ east, a sealing boat was discovered bottom up, painted green on the outside and red inside. It had been hove to, with mast, sails, and oars out, for a drag. A shotgun, a "sticking" knife, with the letters "W. B." cut in the handle, and a seal skin were found in it, the skin being considerably decayed.

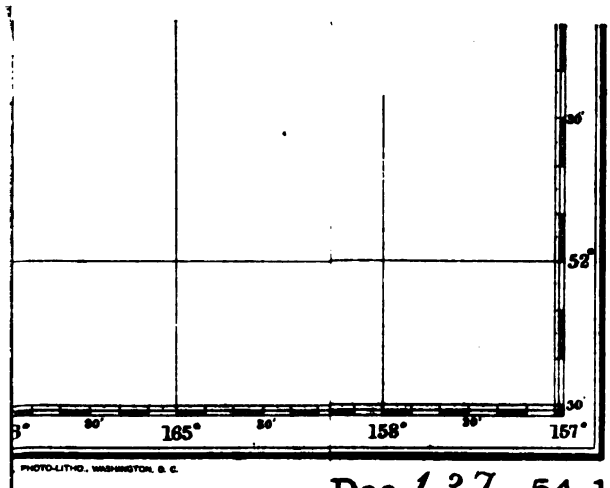
We spoke the schooners *Lillie L.*, of San Francisco, and *Penelope*, of San Pedro, on March 28 and 31, in latitude 39° 02′ north, longitude 144° 44′ east. Heavy gales prevailed until the 1st of April. Fair weather continued until the 9th, during which time 210 seals were taken. Stormy weather again came on, which lasted for three days. On May 11 spoke with the schooner *Casco*, of Victoria, in latitude 39° 43′ north, longitude 142° 54′ east. Very little sealing was carried on until the 18th. On the 19th, two of the boats went astray in latitude 37° 02′ north, longitude 146° 03′ east, and no tidings of them were obtained until the 26th, when the schooner *Kate and Ann*, of Victoria, was spoken and reported that they had been picked up by the schooner *Penelope*, of Victoria.

Sealing was carried on till May 3, when a heavy gale came on, which continued until the evening of the 7th, at which time the *Olsen* sailed for Hakodate. In the afternoon of the next day she entered the Straits of Tangar, and in the evening came to anchor in the above-mentioned harbor.

On May 16 sealing was again commenced in latitude 40° 55′ north, longitude 142° 58′ east, when she also spoke with the *Dora Siewerd*, which reported having 1,300 skins. The following day fell in with the schooner *Penelope*, and received on board the hunters that went astray on April 19. On May 26 picked up a boat and crew belonging to the schooner *Enterprise*, of Victoria, in latitude 41° 50′ north, longitude 142° 26′ east. The next day spoke with the schooner *Umbrina*, of Victoria, which had taken 2,100 skins.

Hunting was carried on without interruption until June 10, the total number of skins taken up to date being 1,055. No more hunting was done on the Japan coast. On June 25 the *Olsen* arrived at Attu Island and on July 15 at Unalaska.

I was informed by the captain and hunters of the *Olsen* that full nine-tenths of the seals taken on the Japan cruise were females, and that it is very seldom that a bull is killed. I have since talked with a number of hunters belonging to other vessels, and they all say that the Japan catch of seals consists mostly of females. A few more males are found at the Copper Islands, but the percentage there is small.



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OBSERVATIONS DURING A CRUISE ON THE DORA SIEWERD, AUGUST-SEPTEMBER, 1895.

By A. B. Alexander.

LETTER OF TRANSMITTAL.

U. S. Commission of Fish and Fisheries,
Office of the Commissioner,
Washington, March 9, 1896.

Sir: I have the honor to transmit for your information a report by Mr. A. B. Alexander, fishery expert of the United States Fish Commission steamer *Albatross*, entitled, "Report of observations made during a cruise in Bering Sea in the sealing schooner *Dora Siewerd*, in August and September, 1895." The preparation of this report has only recently been completed.

Very respectfully,

Herbert A. Gill,
Acting Commissioner.

The Secretary of the Treasury,
Washington, D. C.

CRUISE OF THE DORA SIEWERD IN BERING SEA.

Pursuant to instructions from the Hon. Marshall McDonald, United States Commissioner of Fish and Fisheries, to secure passage on a pelagic sealing vessel for the purpose of making a cruise in Bering Sea, with the object of gathering information concerning the pelagic habits of fur seals, the methods employed for their capture at sea, their food, the proportion of each sex represented in the catch, etc., I left the *Albatross* at Unalaska, the middle of July, 1895, to await the arrival of the sealing fleet. Subsequently accommodations were obtained, through the kindness of Capt. H. F. Siewerd, on his vessel, the *Dora Siewerd*, a schooner of 100 tons register, and one of the largest in the fleet. She carried 18 canoes and 2 boats, and a crew of 36 Indians and 9 white men. As two Indians go in a canoe, the spearsmen and boat steerers were equally divided.

The writer went on board the *Siewerd* in the evening of July 27, but owing to stormy weather she did not sail until the morning of the 31st, getting under way in company with 27 other sealing vessels. The wind being light we were obliged to anchor off Ulakhta Head. Hand lines

were put over here and fishing carried on for two hours, resulting in the capture of 22 cod and 4 halibut.

Early in the afternoon, with a light wind from the eastward, we worked toward Cape Cheerful, which, the next morning (August 1), bore southeast 25 miles, the fleet by this time being considerably scattered. At 9 a. m. 2 sleeping seals were observed, and shortly afterwards the vessel was hove to and the canoes put over. Each hunter among the Indians was anxious to secure the first skin, a superstition prevailing that he who kills the first skin at the beginning of a cruise will be attended with good luck during the remainder of the season. No time was lost in getting the canoes in the water, as a number of other vessels in sight had already lowered their boats. After the canoes had gotten about 2 miles ahead, the vessel followed in their wake; and as the day was clear they could be seen for a long distance. Occasionally a sail would be seen to lower, which indicated that the canoes were among seals.

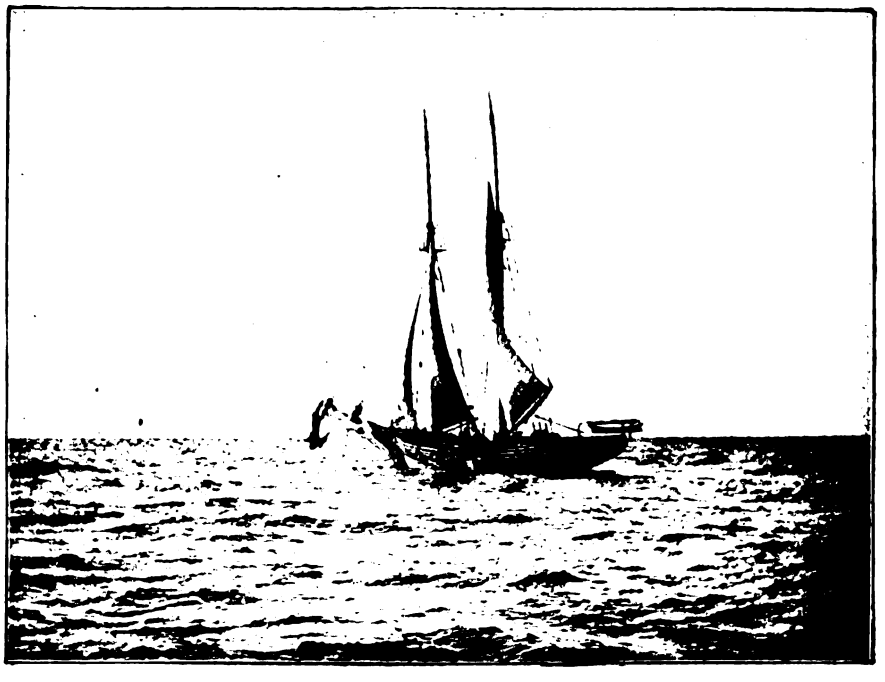
Before entering into a discussion of the details of my observations it may be well to state that the positions of each day's catch will be found in appended Table No. 1, the same corresponding with those given in the vessel's official log. The noon position each day is shown in Table No. 2, in which is also recorded the direction and force of the wind, the barometer reading, and the temperature of the air and water. The temperature of the water was taken 5 feet below the surface. The material found in the stomachs of seals has been labeled with reference to the noon position.

In the afternoon we passed numerous patches of seaweed and kelp. In a few instances seals were seen with their heads and flippers thrust up through this floating material. Occasionally they would dive and swim a short distance, soon returning to the surface, however, rolling over and over in the tangled seaweed, but sometimes stopping in their play on the alert for danger. When on sealing ground, hunters always carefully inspect floating seaweed, and, as a rule, if there are seals about, they are almost sure of finding one or more in each large patch. Late in the afternoon we passed close to such a patch, covering a considerable area, in which 6 seals were playing. They paid no attention to the vessel, although within 100 yards of them. A hunter with a shotgun could have captured 2 or 3 of the number, and an Indian with a spear would have secured at least 2.

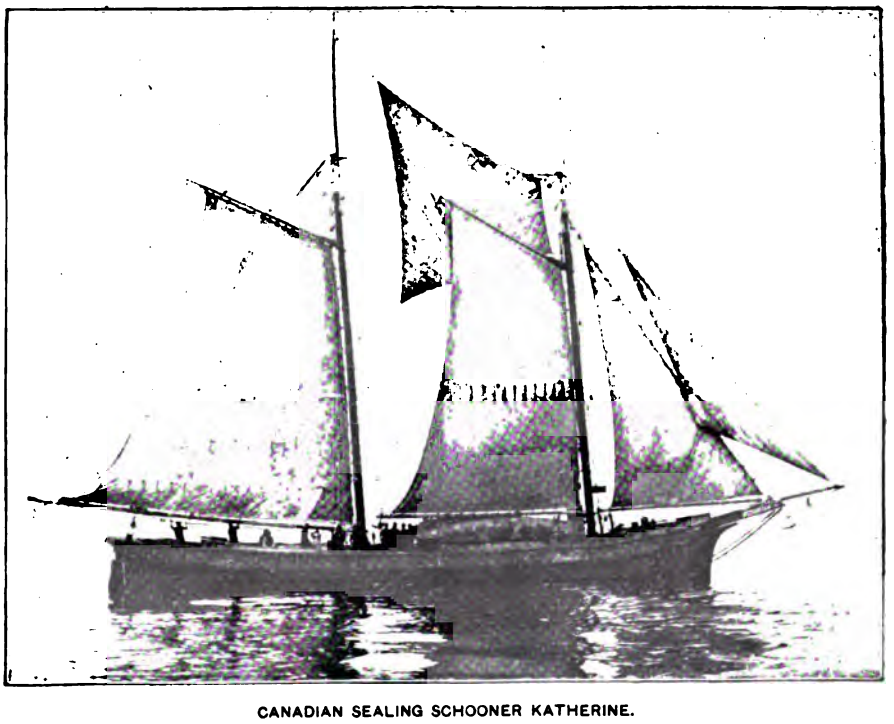
At 5 p. m. the canoes returned with a catch of 42 seals. Three of the males were about 5 years old, all the others of both sexes being from 2 to 4 years old. Their stomachs were nearly all empty, a few containing some material, which, however, was too much decomposed to be identified. The hunters reported seeing but few seals asleep, and these appeared uneasy. Most of those observed awake were finning. No great body of seals had been noticed, and in such pleasant weather, if there had been many on the ground, 18 canoes and 2 boats could have picked up 100 or more. This number of boats, traveling, as they do, in a path from 10 to 15 miles wide, must necessarily see nearly every seal within that belt. The few seals seen traveling to-day were going toward the northwest.

The chief of the tribe reported hearing the discharge of firearms a short distance to windward of his canoe, but he could not tell to what vessel the boat belonged.

The next day, August 2, the boats were lowered at 7 a. m. The weather bid fair for a successful day's hunt, the wind being north-northwest and light, and the sea smooth. In the early part of the forenoon we jogged close to 3 seals playing. Frequently they would roll



CANADIAN SEALING SCHOONER DORA SIEWERD, BERING SEA.



CANADIAN SEALING SCHOONER KATHERINE.
(Formerly called Black Diamond.)

over several times, stop suddenly to scratch themselves, and stand upon their heads with their hind flippers about 2 feet out of water. They repeatedly performed this operation. When quite near them one of the seals lifted its head up, but the sight of the vessel caused no alarm. Having no boat to lower or spear to throw, a loud noise was made by shouting and beating upon a tin can. This did not have the effect of frightening them, but a light thump on the rail of the vessel caused them to dive instantly, and when next seen they were about 200 yards away. Pausing to look at the object which had frightened them, they then swam rapidly away in an easterly direction.

From the above it would appear that seals are ordinarily but little frightened by the presence of vessels, provided they are to leeward of them. Had we been on the windward side the seals would have taken alarm almost instantly, and would either have dived or swam rapidly away.

At 1 p. m. a heavy fog bank appeared in the northwest, and shortly afterwards the canoes and one boat returned. The other boat had evidently gone astray, but as the weather was smooth no great anxiety was entertained for her safety. Forty-five seals were brought on board, 26 being males and 19 females. All the females except 2 were with milk. Their stomachs were mostly empty.

Through the night the weather continued foggy. Early the next morning, August 3, a sharp lookout was kept for the missing boat, and also for seals. No attempt had been made to lower the canoes although the sea was comparatively smooth. The light fog which hung over the water, in connection with the fact of the missing boat, caused the Indians to hang back. At 7 a. m. a sleeping seal was observed under our lee close aboard, but not in a position to detect us by the sense of smell. A canoe was soon launched and started in pursuit, but the short, choppy sea made it somewhat difficult to capture it. In calm weather, or at times when there is only a light wind stirring, a canoe in approaching a seal is generally paddled directly from the leeward, but in a choppy sea, such as prevailed on this occasion, an Indian always approaches side to the wind, which brings the canoe in the trough of the sea and prevents it from making any noise that would disturb the "sleeper."

About noon the missing boat returned, bringing the skins of 2 seals, 1 male and 1 female.

At 1 p. m. another sleeping seal was observed close under our lee. In ninety-nine cases out of a hundred a sleeping seal will awaken when a vessel is close to it to windward, but not so with this individual, for it slept on wholly unconscious of danger, and was easily captured. At this time the weather showed signs of clearing, and soon afterwards the canoes were lowered. The vessel continued jogging to the westward under sealing canvas. One vessel was in sight. Three hours later the canoes began to return, the wind having increased in force, accompanied by a choppy sea, which prevented seals from sleeping. They were reported scarce, and the few taken bore out this statement. The day's hunt amounted to only 13 skins, 6 males and 7 females. Four of the females were with milk. Two of the males were quite large, about 5 years of age or over, the others from 3 to 4 years. Very few seals had been observed from the canoes, and those noticed awake were traveling to the southwest.

In the morning of August 4 the weather was foggy and the wind northwest and moderate. White hunters would not have hesitated about going out in this kind of weather, but the Indians indulged in

considerable unnecessary talk and paid no attention to a few scattering sleeping seals that were observed among patches of seaweed. It was only when an occasional glimpse of the sky was seen through the clouds and fog, and indications of good weather were plainly visible, that the Indians showed a disposition to hunt. At 10 o'clock all the boats went out. At the time of lowering two other sealing vessels were in sight. During the absence of the canoes no seals were observed from the vessel, although floating seaweed was plentiful.

The canoes returned early in the afternoon, on account of a heavy fog bank which suddenly shut down. Only 16 seals had been taken, 8 males and 8 females. Their stomachs were entirely empty, which would seem to indicate a scarcity of surface fish in this locality. One of the hunters spoke the schooner *Annie C. Moore*, which reported having taken 65 seals, a comparatively poor catch, considering that the weather had been fairly good.

The following day (August 5) the weather was not suitable for sealing, owing to fog and mist most of the time. The wind was from the west-southwest to east-southeast, gradually increasing from a gentle to a fresh breeze, accompanied by a sea sufficiently choppy to prevent seals from sleeping. One "sleeper," however, was observed from the vessel and captured.

On stormy days a lookout is kept by the hunters, and the one who first sees a seal is entitled to stand in the bow of the canoe as spearsman. At such times three men go in a canoe, the weather usually being too rough for one man to manage it. No selection of canoe is made, the most handy one being used, and also the first spear that can be gotten hold of.

In the afternoon we stood to the east-southeast 18 miles, and during the night to the south by west 17 miles, sighting Unalaska Island on the morning of the 6th. The weather was stormy and blowing a moderate gale from southeast, with falling barometer. The noon observation placed us in latitude 55° 01′ north, longitude 168° 07′ west, which showed that we had been in a strong southerly current for the past twenty-four hours. Later in the day we ran 19 miles on a northwest course and hove to on the port tack under a two-reefed foresail and fore-staysail and trysail. In the evening we passed close to the schooner *San Jose*. During the night the wind hauled to the southwest and decreased in force to a very fresh breeze. At times during the following day the sea was very rough, not wholly due to the wind, but caused by a strong current running to the southward. At noon the fog and clouds cleared enough to enable us to get an observation—latitude 54° 56′ north, longitude 167° 27′ west. In the afternoon we stood to the northward at a rate sufficient to offset the effect of the current. Late in the day we spoke the schooner *Walter L. Rich*, which had taken only 65 seals. She had been cruising to the westward of our present position, near the 60-mile zone, and while in that region had seen but few seals.

Toward evening two young seals played about the vessel for some time. They were enticed quite near by whistling, but not close enough to spear. It is only rarely that seals are speared from the deck of a vessel. The young will often approach very near and play about, sometimes for an hour or more, but keeping out of reach. Occasionally, however, their curiosity overcomes their customary prudence, and at such times they are generally captured.

In the morning of August 8 there were indications of clearing weather, with rising barometer and an occasional clear spot in the sky. A dozen

SEALING CANOE WITH OUTFIT AND CATCH, DORA SIEWERD.

or more seals, in bands of three and four, were noticed, causing considerable commotion among the Indians. A week of the sealing season had already passed, and only a few seals had been captured, in consequence of which the Indians were becoming restless. At 8 a. m., wore ship and shook the reef out of the foresail, but in a short time the fog again settled down, and remained so for the remainder of the day.

In the afternoon we saw quite a large number of seals, more than at any time since entering the sea. They were not moving in any particular direction. Orcas or killer whales were plentiful, and kept close to the seals, but they did not have the effect of driving them from the ground. The sealers claim that the orcas destroy large numbers of seals annually, especially in and about the numerous passes through the Aleutian Islands and off the coast of Japan. Many hunters say that when out in their boats it is not an unfrequent occurrence to see orcas devour seals. One hunter on board of the *Siewerd* informed me that on two occasions, off the Japan coast, orcas attempted to take the seals that he had shot. During the afternoon we saw five other sealing vessels.

On August 9 the canoes were put over for the first time in five days. The white hunters made a start at 9 a. m., the weather having moderated, and being prompted so to do by the sight of a sleeping seal. The Indian hunters held back for a time, but several other seals being observed, the remaining canoes were lowered. During most of the time while the hunters were absent, numerous birds and whales and several porpoises were observed about the vessel. Early in the afternoon the wind began to increase in force and the canoes to return. By 4 o'clock they were all on board, having secured 20 seals, of which 13 were males and 7 females. The stomachs were nearly all empty, a piece of squid being taken from one and a few fish bones from another. One of the females had lost a hind flipper, and shot were found in two of the skins. One of the seals represented by these skins had been recently wounded, the other probably some time early in the spring, the shot being found encysted. All of the females were in milk; the males were all young bachelors.

Two vessels, the *F. M. Smith* and *Saucy Lass*, were in sight at the time the canoes returned. The captain of the former came on board and reported having taken 105 skins. He also said that the schooner *Triumph* had obtained 283; *Maud S.*, 240; *C. D. Rand*, 100, and the *Saucy Lass* between 60 and 70.

On the following morning (August 10) the weather was cloudy and cool. At 7 o'clock the canoes and boats started out; at the time of their going the sea was long and rolling, and the temperature of the water 2 degrees below that of the air. When the air is a great deal colder than the water, experienced hunters do not, as a rule, expect to find many sleeping seals. They state, however, that there are exceptions to this rule, but in most cases extra cold air makes them restless and very difficult to approach within spearing distance; but with shotguns they may, when in this condition, be killed with comparative ease.

In the middle of the forenoon two vessels were sighted. Only one seal was noticed from the vessel. This individual was "mooching," a term used by the hunters to indicate swimming at the surface of the water with only a very small portion of the body exposed, occasionally thrusting the head out far enough to breathe. Seals frequently swim this way on raw, cold days, when they may readily be shot with guns, but are not easily approached with spears.

At 2 p. m. the Indians began to return, much earlier than they should

have done, having lost patience and become discouraged. They lack the persistence and judgment of the white hunters, and will give up the chase on the slightest pretext. The latter, on the contrary, will remain out as long as a chance remains of adding another skin to their catch. One hunter, however, had secured 14 seals, the largest catch of any one canoe since entering the sea. The total number of seals in the day's catch was 73, 18 being males, and 55 females. Their stomachs, like those previously examined, contained but little food; only a few pieces of fish and fish bones were found. In one of the canoes 3 female seals had been skinned; of those brought on board 3 were without milk. When asked if the seals skinned in the canoe were in milk, the Indians said they had not noticed. If the condition of the seals had been observed the same answer would have been given, for as soon as these Indians learn that certain information is wanted they are very reticent, and but little dependence can be placed in what they do say. Seemingly they have been taught to look with suspicion on every person in search of sealing data.

The canoes that went to the northwest of the vessel were more successful than those that went in other directions, and the one that brought in the 14 seals hunted about 6 miles to the northwest of all the other canoes in that locality. A great many traveling seals were observed, all bound to the northward. Nearly all information concerning the direction in which seals were traveling was obtained from the white hunters. Indians, as a rule, pay but little attention to traveling seals, generally attempting to capture only those that are asleep, but sometimes they will endeavor to spear them when rolling and finning.

In two of the seals taken shot were found, the wounds being comparatively fresh—not more than a week old.

On August 11 the canoes and boats went out at 5 o'clock, light wind and cloudy weather prevailing all day. In the afternoon sleeping seals, two and three in a bunch, were frequently observed from the vessel. Whales were plentiful from sunrise until dark. The smoke of a revenue cutter could be noticed to the southwest all the morning, the sight of which caused our canoes to hover much nearer the vessel than usual, the Indians having a dread of all Government vessels. At 10 a. m. a canoe belonging to the schooner *Triumph* came alongside with 5 seals. Our canoes began to return at 5.30 p. m. and continued to come in until 7 o'clock, when the last one arrived. The largest catch was 10 skins and one canoe obtained nothing. Sleeping seals were reported in small bunches from 1 to 2 miles apart. The hunters who happened to be near these bunches did fairly well, but a few miles to the southwest only few seals were found. Traveling seals were also plentiful among the bunches. Considering the fine weather prevailing and the number of seals observed from the vessel the catch was comparatively small, only 89 having been taken—10 males and 79 females. Sixty-five of this number were examined. The stomachs in 49 were empty, 13 contained liquid matter, and 7 material which it would be possible to identify; the latter was preserved. A large number of canoes hunting on the same ground tends to destroy the chances of a good catch by any of them. Canoes from other vessels were in close proximity to ours and none of them did well. This day's catch was made 12 miles north and 9 miles west from that of the day before.

On August 12 the hunters made an early start, the weather being cloudy and cool, the wind from the westward and light; sea smooth; temperature of air and water the same. Later in the forenoon a heavy

SKINNING SEALS, DORA SIEWERD.

fog bank threatened to envelop us, and shortly after noon it came in thick, causing all the canoes to return, having obtained only 15 seals.

On August 13 the weather was unsuitable for sealing, being cloudy and threatening; the wind fresh from the southwest and west-southwest. In the morning we were in company with the schooners *Triumph* and *Sapphire*, of Victoria, the former having taken 500 skins and the latter 450 skins. Captain Siewerd and the writer went on board of the *Sapphire*. It had been noticed that the water about us was very dark in color, much darker than usual, and it had also been observed that in localities where we had taken the most seals the water had been the most discolored. Captain Siewerd had on more than one occasion noticed that seals frequent water of this character in considerable numbers, and had noted the fact in his log. Captain Cox, of the *Triumph*, stated that when in Bering Sea last year he got most of his catch in this locality, namely, latitude 54° 56′ north, longitude 168° 15′ west. He found seals at the commencement of the voyage in water very much discolored, and he endeavored to keep in such water as much as possible. This experiment resulted in his averaging 126 seals for each time the canoes were lowered during the month of August, 1894. On the strength of meeting with such good success, he has been cruising this season on the same ground, and is now more convinced than ever that seal life is more abundant in discolored water than in clear water. Captain Cox attributed the poor catch of seals on August 11 to the great number of canoes roaming over a comparatively small area. On the day mentioned the *Sapphire* took only 68 seals and the *Triumph* 73. A few days before a large bull seal was captured by the *Sapphire* with two spears embedded in its body.

On the forenoon of the next day (August 14) the weather did not bid fair for sealing, the sea being choppy and the wind fresh from the west-southwest. No seal life was observed until the middle of the day, when one seal was noticed asleep not far from the vessel, and so soundly that the flapping of the canvas did not disturb it. It was captured. Its stomach was empty.

At 12.15 p. m. the weather began to show signs of moderating, and soon afterwards the canoes were lowered in latitude 55° 3′ north, longitude 167° 45′ west, where a number of seals were observed playing. The good weather was of short duration, however, the canoes returning by 3.15 p. m., a heavy fog having settled over the water. The white hunters did not come in until nearly dark, thus showing the difference between the two classes. The fog lifted in about an hour after the Indians returned, but they could not be induced to go out again. In several instances where Indians have become discouraged and wanted to return home they have, in order to accomplish their purpose, broken their spears and smashed their canoes, thereby breaking up the voyage. Previous to about two years ago there was no law in British Columbia regulating the conduct of Indian hunters on sealing vessels, and the result was that every possible advantage was taken of the situation. Under the law recently passed Indians are now held accountable as much as white men for the success of the voyage.

The boats containing the white hunters brought back 4 seals, making the total number for the day 30, of which 14 were males and 16 females. The females were all adults, and with milk; the males were small, from 3 to 4 years old. Only three stomachs contained food. In one young male's stomach was found a number of squid beaks; in the stomach of

a female, a piece of squid; and in another, material resembling partly digested crustaceans.

The water through which we had passed was considerably discolored, and the few seals taken were captured where crustaceans were the most abundant. In the evening large flocks of guillemots, petrels, and auks were noticed, apparently feeding. No small fish being noticed, it was supposed that the birds were feeding on minute surface life.

On August 15 the weather was very pleasant, only light airs disturbing the water, and a finer day for sealing could not be desired. By 5 a. m. all the boats had left the vessel, not returning until about the same hour in the evening. A considerable number of sleeping and traveling seals were in sight most of the day. Those that were traveling were not, so far as was observed, going in any one direction. Sometimes a bunch of two or three would suddenly start toward the southeast, swim rapidly for a few minutes, stop, and go in an opposite direction. Frequently four or five would make a complete circle around the vessel at a distance of a quarter of a mile. In a few instances young seals came and played about, diving and swimming, etc.

An abundance of seals was seen from the vessel, but as they occur in bands more or less widely separated, it was not certain that the canoes and small boats would get among them. All through the day whales and birds were numerous and the water was very much discolored, signs now looked upon as favorable indications for a successful day's hunt.

At 4 p. m. the boats began to return and by 6 o'clock they had all arrived except one. The day proved fairly successful, 99 seals having been taken, 31 males and 68 females. Nine was the highest catch and 1 the lowest by a single boat or canoe. They were by far the largest seals yet obtained, only 8 of the females being under 3 years of age. All of the stomachs were examined, but only 10 of the number contained food, some a small amount of liquid matter, and others Alaskan pollock and what appeared to be pieces of cod.

In the evening the wind began to freshen from the east-southeast and later the stars were visible for the first time since we had entered the sea. All through the night the wind was fresh, causing a choppy sea by morning. During this time we had worked 20 miles to the westward. A sharp lookout had been kept for the missing canoe and a torchlight was displayed at frequent intervals.

No boats were lowered during the day, the conditions being unfavorable. The wind did not blow hard at any time, but was strong enough to prevent the seals from sleeping. In the afternoon we spoke the schooner *Louis Olsen*, which had taken 30 seals the day before. At 4 p. m. we attempted to sound in latitude 55° 15′ north, longitude 168° west, but got no bottom, although we were close to the edge of the bank. Just before dark a young seal came alongside and began to play about the vessel, first on one side and then on the other, affording great amusement to the Indians. After a good many wild throws it was captured and proved to be a female.

On August 17 a fairly good day's work was accomplished. Light airs prevailed from southeast and east-southeast, with frequent calms. Light fog and showers occurred several times during the day, but they were not heavy enough to prevent seals from sleeping. Early in the morning a young seal came alongside and was taken. At 6 a. m. all the canoes were lowered; after their departure no seals were seen from the vessel. Early in the afternoon a canoe belonging to the schooner *San Jose* boarded us and reported that vessel as having 530 skins. At 7.30

p. m. our hunters returned bringing 85 seals, 28 males and 57 females. All of the females were exceptionally large; the males were all young bachelors, from 4 to 5 years old. A careful examination was made of the stomachs, only 6 of which contained food. In one stomach was found small pieces of squid, in the others small bones and pieces of fish. The catch to-day was not very evenly distributed among the boats, the highest bringing in 14, and four 1 each.

On August 18 the wind was from the southeast by south to south-southwest, decreasing from a stiff to a gentle breeze. The sea was choppy in the morning, and a long rolling swell prevailed in the afternoon. The weather was foggy and variable, all of which conditions were unfavorable for sealing. At noon there were signs of clearing up, and shortly after that the canoes were lowered in latitude 55° 51′ north, longitude 168° 32′ west. The Indians had no great desire to go out, and probably would not have ventured had it not been that the schooner *Willard Ainsworth* was a short distance away and had already lowered her boats. Five other vessels were also in sight. At the end of three hours the hunters returned, having secured only 2 seals—1 male and 1 female. Very few seals had been seen, the only "sleepers" being the 2 that were captured. The others were traveling in various directions.

The next day, August 19, rain prevented seals from sleeping. At 8 a. m. the canoes were lowered, but the weather did not give promise of satisfactory results, even in case seals were plentiful. The canoes remained out only two hours, returning with 2 males and 2 females. Their stomachs, like those of yesterday, were empty. The mate of our vessel while absent had boarded the schooner *Florence M. Smith*, and learned that she had taken 546 seals. On the 15th she secured 160 seals; her position on that day having been not far from where we hunted—latitude 55° 08′ north, longitude 167° 40′ west. He was also told that our canoe which went astray on the 15th had taken 12 seals, making our total catch for that day 111 skins.

Shortly after the boats returned a sleeping seal was observed close aboard, and although it was raining hard it slept on, wholly unmindful of the weather. Such an occurrence is very unusual, for it is seldom that seals rest well while it is raining, unless they have become thoroughly exhausted by a long spell of rough weather. Later in the afternoon a few traveling seals were seen; they frequently changed their course, but the general direction of their movements was northwesterly. We had been in discolored water all day, but late in the afternoon we suddenly jogged out of it into clear water. The noon observation, latitude 54° 56′ north, longitude 168° west, indicated that we were in a strong south-southwest current.

On August 20 a very satisfactory catch was made, the wind being a light breeze from the westward, and the sea smooth. A light fog hung low over the water at times, occasionally clearing for the space of half to three-quarters of an hour, which enabled the hunters to keep track of the vessel. The boats were lowered at 4.30 a. m., at which time seven other sealing vessels were in sight. During the afternoon we frequently saw canoes lower their sails, indicating that they were among seals. We could not tell to which vessel they belonged, as both boats and vessels were well mixed up together.

One canoe returned early in the afternoon with 11 skins, and by 7 p. m. 111 seals had been landed on deck, 44 being males and 67 females. Sixty-two of the latter were nursing females. All the males were from 4 to 5 years old except 2, which were about 6 years old. Squid and

pollock made up the bulk of the food found in their stomachs, a few being gorged with it. In proportion to the number of seals taken, however, only a few contained food. The squid and pollock were in a comparatively fresh state. From the stomach of one male an eelpout was taken.

It is a fact worth mentioning that all the seals taken by us to-day were found in "streaks" of discolored water from 1 to 3 miles wide, and extending nearly in a north and south direction. The character of the water could hardly be accounted for by our close proximity to the bank, for if such had been the case it would have been the same all over. It had previously been noticed that these discolored bands ran parallel to each other in northeast and southwest or northwest and southeast directions. Water in this condition would not ordinarily be noticed from the deck of a steamer unless on the lookout for it. The mate reported seeing an abundance of Alaskan pollock jumping and many traveling seals in pursuit of them.

Most of the seals taken to-day were captured asleep, only four having been awake when speared. The latter were "mooching."

In and about the neck of a male seal were found several shot wounds, with blood oozing from them. Another seal had a bullet hole close to its right forward flipper.

On the morning of August 21 there was every indication of favorable sealing weather. The sky was dark and cloudy, but the wind was light and the sea smooth. The Indians went out at an early hour. Not long after their departure we spoke the schooner *Agnes McDonald*, which had picked up our hunters who went astray on the 15th. The *McDonald* reported having 900 skins. Her white and Indian hunters were equally divided as to numbers, and the former had taken between 40 and 50 more seals than the latter.

The Indians of the Northwest Coast have always been of the opinion that white men could never become expert in the use of the spear, and this spring they ridiculed the idea when told that white hunters were to be employed on a few vessels. If white men will only exercise the same patience when hunting with spears as with shotguns, they will soon become as proficient in its use as the Indians. Such a result would be greatly to the advantage of captains and vessel owners, as the Indians have had the opportunity heretofore of dictating their own terms.

At noon a heavy fog settled down, causing the boats to return; but fairly good results were obtained, 69 seals being taken—12 males and 57 females. The males were small, ranging in age from 2 to 4 years. Forty-eight of the females were exceptionally large, 4 medium in size, and 2 about 2 years old. The first mentioned were all with milk, the others without. An examination of their stomachs showed that they had been feeding largely on squid, Alaskan pollock, and salmon, a considerable amount of which could not have been in their stomachs more than a short time, as it was very fresh in appearance.

The mate reported seeing, while hunting, a small school of squid, but observed no seals among them. The other white hunters noticed numerous small fish jumping, and frequently seals in pursuit of them. The fish could not be approached near enough to determine their species.

At the time of lowering the canoes a dead whale was seen to windward, about 1½ miles distant. We kept in sight of it all day. In the evening, after the work of skinning had been finished, a party of Indians went to it and brought back a quantity of blubber. The head

had been cut off. Numerous birds were hovering over the carcass and many were feeding on it, but no seals were noticed near at hand.

On August 22 the boats were lowered at an early hour, the weather being similar to that of the day before, with light and gentle winds from the westward. At the time of lowering 4 other vessels were in sight, directly to windward. This, of course, placed our boats in a bad position, as a windward berth is superior to all others. When following in the wake of other boats only poor results are to be expected, as the windward hunters disturb the sleeping seals.

At noon a hunter on the *Agnes McDonald*, who came on board, reported his vessel as having 920 skins, the highest catch for one day having been 253, and the next highest 180. The 253 seals were taken on the 15th, and not far from our position on that date. The hunter informed the writer that on the day before he speared a large male just as it came to the surface with a red rockfish in its mouth. The fish was alive, and as it was not at all mutilated it was taken on board and cooked. He also stated that he speared a sleeping seal close to the floating carcass of a dead one. Indians claim that seals will not remain where carcasses are floating, but this is not always true, for on several occasions we had noticed seals among such objects.

At 4 p. m. a heavy fog set in, putting an end to further hunting for the day. Forty-four seals composed the catch, 12 being males and 32 females. The males were all young bachelors and all the females were in milk except 2. The stomachs of 33 were empty, 11 contained pieces of squid, salmon, pollock, and numerous fish bones.

In the evening we shaped our course to north-northeast, and during the night ran 25 miles in order to get near our position of the 21st. In the morning the weather was unfit for sealing, and as the day advanced the chances grew less favorable.

At 10 a. m. we sounded in 90 fathoms, the first time we had been on soundings since leaving Unalaska. At 4 p. m. our longitude by observation was 168° 05′ west, latitude at noon 55° 28′ north, near where the 69 seals had been taken on the 21st. In the evening we were boarded by officers from the revenue cutter *Rush*.

On August 24 the weather was too variable to entertain hopes of success at hunting. A heavy, wet fog in the morning, combined with a moderate breeze and choppy sea, prevented an early start. At 7.30 a. m. a slight clearing caused the canoes to be lowered. The signal gun was kept firing at short intervals until 10 o'clock, when the fog entirely cleared. The spell of good weather was of short duration, however, for at noon a squall from the north brought all the hunters back. In the short time that the boats were out 21 seals were taken. This was encouraging, for it indicated that we were on good sealing ground. Most of the seals captured were restless, few being sound asleep, or, in sealers' parlance, they did not "lay up" well. The mate came across two seals sleeping side by side, one of which was speared. Instead of the other one becoming alarmed and diving, as is usually the case, it remained near its struggling companion until the latter was hauled into the boat. The food found in the stomachs of the seals to-day did not vary much from that recorded in those previously examined in this locality, namely, squid, squid beaks, salmon, pollock, and fishbones. The males were comparatively large; the females were all adults and with milk.

During the night we stood to the westward 50 miles, and then hove to.

The weather on August 25 prevented sealing, being cold with a fresh breeze from north to north by east, accompanied by a rough sea. The

vessel was hove to under sealing canvass. Excellent observations were taken, it being the first time the sun had remained out for any length of time since the cruise began. All day birds had been numerous, and occasionally a sleeping seal was observed; sometimes two and three were seen together. This, combined with the great number of birds, assured us that we were on good ground. We frequently wore ship in order to hold our position. In the evening rain squalls passed over.

On the morning of August 26, the wind and sea having subsided, the canoes were lowered in latitude 55° 15′ north, longitude 170° 53′ west. The weather was pleasant but cool, the air being 2 degrees colder than the water. This difference, according to the theory of many sealers, would cause seals to "lay low," or, to put it in clearer terms, they would sleep with less of their bodies exposed.

In view of the number of seals observed before the boats went out, a large catch was anticipated, nor were we disappointed, for in the evening when the last canoe had returned there were 157 seals on deck.

The opinions advanced to the effect that seals are more plentiful where birds occur seem to be entitled to consideration, and it is very probable that had we not heeded their presence yesterday, and had sailed by them, our catch to-day would not have been large. Our captain had become thoroughly convinced of the value of these signs after years of experience.

The canoes were all back at 6.30 p. m., having been absent over twelve hours. In the forenoon seals were inclined to be restless, but occasional warm rays of sun in the afternoon caused them to sleep soundly. It was noticed that a large portion of to-day's catch was speared either in the breast or back, close to the forward flippers, indicating that the seals slept soundly, with their bodies largely exposed, which gave the hunters an opportunity to strike the most vital part. Aside from the favorable condition of the weather, the absence of other vessels from the ground materially aided in increasing the day's catch.

In only 12 stomachs was food found which could be identified, the others being empty. In the full stomachs were observed squid, pollock, and one piece of salmon. Fifty of the 62 males were 4 to 5 years old, the other 12 about 3 years old. Ninety-two of the females were adults, and 2 under 3 years of age.

All through the night of the 26th and the morning of the 27th the weather was calm, or nearly so. At daybreak a light fog hung over the water; in the middle of the day it cleared away. On the strength of yesterday's success the hunters went out at an early hour. From the vessel scattering seals were observed all through the day. The water was very much discolored, and whales and porpoises were abundant, but there was a marked scarcity of birds as compared with yesterday. At noon a good observation of the sun was taken, which placed us in latitude 55° 10′ north, longitude 170° 47′ west.

At 4 p. m. the hunters began to return, and at 7.30 o'clock the last one had arrived. The catch nearly equaled that of yesterday, amounting to 146 seals, 68 being males and 78 females. It will be seen by this that there are times when the sexes are nearly equally distributed, but as a rule the majority of seals taken at sea are females. Sixty of the 146 seals were opened; food was taken from 6 males and 14 females, consisting of squid, pollock, and a small quantity of fishbones. The stomachs of the females opened contained a greater quantity of food than the males. Thus far, in the examination of stomachs, it had been noticed that those of the males contained much less material than the females.

Most of the males caught to-day were very young, 3 and 4 years old;

the females were much larger. Seventy-four of the latter were in milk; those that were not were from 2 to 3 years old.

On the morning of August 28 the weather looked favorable for a repetition of the previous day's work. The hunters were well clear of the vessel at 5.30 o'clock, at which time another vessel and the smoke of a steamer could be seen low on the horizon. In the middle of the day a canoe belonging to the schooner *James G. Swan* came alongside and reported that vessel as having 860 skins. During the latter part of the day the weather became threatening. The barometer had been falling rapidly since noon, the wind had shifted from southwest to southeast, and no seals had been observed from the vessel. At 6 p. m. the hunters returned, bringing 57 seals. Two of the males were large, the others were all small.

As soon as the canoes and boats were hoisted in and secured for the night, a single reef was put in the foresail and a reefed trysail set, and preparations made for stormy weather. At dark the wind began to increase in force, and by midnight it was blowing a moderate gale, which continued until the following noon. Occasional heavy rain squalls passed over, which kept the sea down somewhat. In the evening two sleeping seals were noticed, which was unusual under the circumstances.

In the morning of August 30 the wind had again increased to a moderate gale, and since midnight had changed 2 points to the southward. The sea was very rough; weather clear and sunny.

At 10 a. m. wore ship and lay to on the starboard under close-reefed sails. Both in the forenoon and afternoon we saw scattering seals. They were seemingly not bound in any particular direction, and most of them were playing. One was observed asleep.

We had been in comparatively clear water all day, but late in the afternoon suddenly jogged into discolored water. At 5.30 p. m. the jib was set, and we stood on a southeast by south course, so as to give the 60-mile limit a wide berth, the wind and sea for the past twenty-four hours having carried us toward it. We worked to the south and west all night. In the morning of August 31 the wind and sea had gone down considerably, and one vessel was in sight. At noon we were in latitude 55° 11′ north; longitude 170° 05′ west. We spoke the schooner *Enterprise*, of Victoria, with 1,387 skins on board. She reported the schooner *Libbie*, with 1,040 skins, and the *Carlotta Cox*, with 600. The last-named vessel carried only 6 boats, and white hunters, which speaks well in their favor as seal hunters with spears.

Shortly after meridian we passed several sleeping seals, but the condition of the weather prevented the hunters from going out. About two hours later several more were seen, and at 4 p. m. we came across a bunch of "sleepers." At this time the weather showed signs of clearing, and 7 canoes were lowered, but they were out only a short time when the weather again became threatening. Eleven seals was the result of this short trial, 5 being males and 6 females. They were all very small and only one contained food. Four of the females were without milk.

Through the day we had been in markedly discolored water, and the other indications were favorable to the presence of a considerable body of seals on this ground, which turned out to be the fact, as proved by the results of the hunting on the following day.

The wind had been moderate all through the night, and in the morning of September 1 a light air was moving from the southwest, the sea being smooth. The sky was cloudy and the air cool, but as the day

advanced it grew warmer. Whales could be heard blowing through the night, and at daylight a number were seen close by; also immense flocks of birds. At 5.30 a. m. the hunters started under very favorable conditions, the sea being smooth and nothing in the atmosphere indicative of a change. The wind being very light, the vessel remained in one position most of the day. Numerous seals were observed, both awake and asleep. The former were moving only slowly, seldom going over 100 yards, and spending most of the time in finning, rolling, and scratching themselves. In the afternoon we were boarded by the revenue cutter *Rush*. At 5.30 p. m. the canoes began to return, each one bringing a good catch, the largest amounting to 25 seals, the smallest to 11. The total catch was 336. This was a phenomenal day's work, affording the greatest number of seals ever taken in Bering Sea in one day, except that the schooner *Sapphire* in 1894 captured about 400 in the same length of time.

There were 120 males and 216 females. The stomachs of those opened showed a remarkable scarcity of food. The material from 8 males and 10 females was all that was in suitable condition to identify, and consisted chiefly of squid, although pollock and what looked like cod made up a portion of the food preserved. Taking into consideration the amount of surface life observed from day to day, it has appeared remarkable that so few seals should have food in their stomachs.

To-day both Indian and white hunters reported numerous seals, finning, rolling, and asleep. In the early part of the day they were inclined to be restless, but in the afternoon the warm sun caused them to sleep soundly, and so plentiful were they that sometimes it was a hard matter to decide which one to spear first. Of course, where seals sleep so near together, those in close proximity to the one speared are liable to be disturbed, but there were enough others in the near vicinity to keep the hunters busy without paying much attention to the disturbed ones. They were reported as lying about like logs, as far as the eye could reach. The hunters claimed that in all their experience they had never before beheld anything like the sight presented. Small schools of squid, pollock, and other fish were plentiful. One of the white hunters reported seeing several Atka mackerel, and from the description given it is possible he was correct. The day had been a perfect one for sealing, and no other vessels were on the ground.

During the night we jogged to the southwest 14 miles. In the morning of September 2 the hunters were out at an early hour, weather being clear and pleasant, the sea smooth, and the wind light from northeast by north. At 10 a. m. two of the canoes returned, the hunters claiming that the air was too raw and chilly for seals to sleep well, there being 2 degrees difference between the air and water. Only a few scattering seals had been seen, and they were rolling and finning. It was not long before all the canoes returned, bringing altogether 10 seals—6 males and 4 females. Three of the latter were nursing females. Their stomachs were comparatively empty, what little food they contained being of the same character as on the previous day, namely, squid.

At 4 p. m. an observation of the sun placed us in latitude 55° 22′ north, longitude 170° 36′ west. At this time we saw several patches of sea weed in which seals were finning and playing. We spoke the schooner *Enterprise* and learned that she had captured 236 seals on the 1st, about 12 miles south of our position. We were also informed that a number of other vessels had been very successful, which would indicate that the seals covered a considerable area on that day and were *not* wholly confined to our immediate vicinity.

September 3 was cold and cloudy, the wind being northeast and fresh, the sea short and choppy. A few "mooching" and finning seals were occasionally seen; no travelers were observed. At 5 p. m. we spoke the schooner *Ainoko*, which had taken 750 skins. For the past week she had been cruising in the vicinity of Akutan Pass, but had not found seals abundant enough to remain on that ground. Last season good catches were made there. She was now bound to the westward in search of a large body of seals which had been reported a few days previous by the revenue cutter *Grant*.

We continued to jog to the northward for about 20 miles and then hove to. All the afternoon scattering seals had been observed, most of them in our wake. They would follow the vessel for a half hour at a time, seemingly through curiosity. At times during the night seals could be heard playing around us. In the morning several bunches were noticed close by, a few playing, but the majority going in a northwesterly direction. In the early part of the day the barometer began to fall, the weather became threatening, with the wind east and sea rough. At 10 a. m. wore ship and jogged to the southeast under snug canvas, wind a moderate gale from the east-northeast. From daylight until dark more seal life had been observed from the vessel than at any previous time since entering Bering Sea. Our attention was especially attracted to the character of the water, which had the appearance of being filled with minute surface life. Birds were numerous, and an occasional whale was in sight.

During the next three days stormy weather prevailed, the wind being east-northeast and blowing from a moderate to a strong gale; the sea was heavy most of the time. On the morning of the 7th the wind had subsided to a moderate breeze. During this long spell of boisterous weather seals were frequently observed, some playing and others traveling in a southwesterly direction. Birds were plentiful most of the time. At noon on the 7th we were in latitude 56° 22′ north, longitude 171° 50′ west, and it was quite evident that we had encountered a strong northwesterly current. At 8 p. m. wore ship and stood to the southeast so as to give the 60-mile zone a wide berth. A vessel cruising near this line without getting an observation for several days, and having no means of knowing the direction of the current, is very apt to be from 30 to 40 miles out in her reckoning.

At 6 a. m. on September 8 the hunters were making preparations to lower, the sea being smooth and a light breeze blowing from the eastward; the weather was cloudy. At 10 a. m. the hunt was interrupted by a heavy, damp fog. Ten seals had been obtained—7 males and 3 females. Five of the former were between 4 and 5 years old; the other 2 were very small, about 1 year old; the females were all nursing cows. The stomachs of these seals were nearly all empty. Only a few of the hunters saw seals, and according to appearances there were but few in this locality. Two of the boats rowed and sailed fully 15 miles each without encountering a single one. Fish and other surface life were correspondingly scarce. As our position—latitude 56° 35′ north, longitude 172° 20′ west—placed us very near the bank, the scarcity of seals was surprising.

While a number of the canoes were waiting alongside to be hoisted on board a small seal came up in our wake, apparently attracted by the blasts of the fog horn and remaining unconscious of danger until one of the canoes had closely approached it and the spear had been poised for striking. It was captured.

At 3 p. m. we made all sail and stood to the southeast. Shortly after

this the fog lifted for a short time and an observation of the sun was taken, placing us in latitude 56° 32′ north, longitude 172° 45′ west.

The next morning we had made 50 miles in a southeast direction; the weather was pleasant, the sea smooth, and the sky periodically clear. A few seals were noticed early in the day. At 9 a. m. the presence of 3 seals, supposed to be sleeping, prompted two hunters to launch their canoes, but they dived just as the spears were being thrown. The appearance of seals, however, acted as an incentive for all the canoes to go out, but they soon returned in consequence of fog. Nine seals only were obtained, 4 being males and 5 females. Although fish were reported jumping, nothing was found in the stomachs of these specimens.

In the night we had worked to the east-southeast, and in the morning we were in latitude 55° 50′ north, longitude 171° 49′ west. At 5 a. m. a sleeping seal was speared close to the vessel; its stomach was well filled with food, consisting apparently of Alaskan pollock. At this hour the weather was very foggy and the Indians were not inclined to start. Presently, however, the fog lifted somewhat and several more seals were seen. A signal gun could now be heard, indicating that a sealing vessel was near and that her boats were out. This circumstance stimulated the hunters to action, and in a short time the canoes were hoisted out. As the fog cleared birds, whales, and porpoises could be seen to the northwest, and also flocks of petrel on the water close by. The season being now well advanced, the hunters were expected to take advantage of every opportunity, and, moreover, on the strength of their previous good success, they were quite eager to add a few more skins to the number on board. The weather could no longer be trusted for any length of time, and that proved to be the case on this day. At 11 a. m. the fog became so dense that the captain was as anxious to get the hunters back as they were to return. Seventeen seals composed the catch, 5 being males and 12 females. Eleven of the females were nursing cows, and the males were all young. One canoe obtained 5 of the number, all of which were asleep and separated just far enough so the noise made in capturing one did not disturb the others. A considerable number of "rollers" and "finners" was noticed, but the damp fog seemed to prevent them from sleeping. Had the day been warm it is probable that a good catch would have been secured.

In proportion to the number of seals taken, a greater amount of food was found in their stomachs than on any previous occasion. Squid and pollock mixed with crustaceans composed the greater part of the material identified. Squid beaks were very conspicuous in every stomach in which food was found. As in previous cases the stomachs of the females were much better filled than those of the males.

The second mate while out hunting had boarded the schooner *Triumph*, whose gun had been heard earlier in the day. She reported having 1,800 skins. The day before she took 20 skins 30 miles to the eastward of our present position. For the past few days she had been gradually working to the westward, but only a few scattered seals had been noticed. To-day her hunters brought in 42 skins. Captain Cox expressed the opinion that if good weather should prevail for a few days encouraging results would follow, as there was every indication that seals were plentiful on this ground. The elements were against us, however, and for the next four days the weather was rough and boisterous.

On September 11 the wind blew a very fresh breeze, varying in direction from south by east to southwest, accompanied by a rough sea. No seals were seen, but many birds were about. During the

DECK OF THE DORA SIEWERD.

night of the 11th and the morning of the 12th the wind increased in force and hauled to the westward. The sky was filled with heavy clouds, the air was raw and chilly. Occasionally we wore ship to hold our position. Scattering petrels and other sea birds were frequently seen, but only one seal was sighted during the day. At sundown the barometer began to rise. In the evening the sky cleared and the stars came out, but the sea continued heavy and was accompanied by a flying scud.

On September 13 the wind varied in force from a light to a stiff breeze, with changeable weather, rain, mist, fog, and rough sea, occasionally clearing. Birds were plentiful, one of which was seen to dive close to the vessel and bring up a fish about 10 inches long. In the afternoon 3 seals were observed sleeping side by side, the vessel almost running over them before they awoke. They must have been much exhausted from loss of sleep in the recent gale.

In the morning of September 14 the wind had again increased to a moderate gale. The weather was foggy and misty at times, with a heavy, rough, and tumbling sea. Two seals were observed in the forenoon. Near noon we ran into an area of discolored water, in latitude 55° 20′ north, longitude 171° 25′ west, in which were a number of seals. Notwithstanding the very rough condition of the sea and the moderate gale prevailing, several of them were asleep. Their bodies were but little exposed, and it was only when we were quite near them that they could be made out. The gale finally broke, and in the morning of September 15 only a light, variable air was moving. The sea had also gradually gone down with the wind. At 7.30 a. m. several seals were observed and the canoes were lowered. Two sleepers were captured a short distance from the vessel. At 11 a. m., however, a heavy fog and mist settled down, accompanied by a cold wind from the northwest, which had the effect of bringing back the hunters, all of whom were on board at 1.30 o'clock, having captured 24 seals, 16 males and 8 females. Pieces of squid were found in the stomachs of some of them. Fourteen of the males were very small, and 2 between 4 and 5 years old. The females were larger, 5 being with milk. The hunters reported seeing a large number of seals rolling and finning.

Numerous birds and a great many whales were in sight all day. At noon we were in latitude 55° 10′ north, longitude 170° 06′ west, which was not far from the position where we had taken 157 seals on August 26 and 146 on August 27. The color of the water varied but little on these dates, the strips of discoloration also running in the same general direction. It would appear as though these bands of discolored water were governed chiefly by the currents, being but little affected by the wind. Late in the day the fog gave way to occasional rain squalls. Birds were exceedingly abundant, and we frequently sighted scattered seals, the most of which were playing. In the evening several hail squalls passed over, after which the sky cleared.

Preparations were made to lower the canoes on the following morning, but the work was interrupted by the sudden breezing up of the wind from the westward. In the afternoon the clear weather suddenly changed to mist and rain, with an occasional squall. Only 2 seals were seen, 1 asleep and the other playing. A canoe was lowered for the "sleeper," but it was lost sight of in the choppy sea. Whales and birds were plentiful all day, and in some places immense flocks of petrel were sitting on the water. They were evidently feeding on small marine organisms, for as soon as we had jogged past they would settle down in the same spot from where they had been frightened.

Early in the evening a sealing vessel passed to windward with her

flag set, indicating that she was homeward bound. The sight of this vessel put the Indians in high glee, for the season was now getting late and they were anxious to go home.

On September 17 the weather was a repetition of that of the previous day. In the early part of the day we saw 9 seals circling around in various directions and occasionally rolling and finning. Observing this number of seals from the vessel with a choppy sea running was a good indication that under better conditions they would be found plentiful. At noon the weather showed signs of moderating, but the Indians could not be induced to venture out on account of a few squally looking clouds low on the horizon. At 2 p. m. two white hunters started out, but after a two hours' hunt they returned empty-handed. Only 4 seals had been seen, 3 finning and 1 asleep. At the time the boat left the vessel the water was comparatively clear, but about 3 miles to the northwest it came into very much discolored water, in which birds were plentiful and a few fish were seen jumping.

Early in the following morning, September 18, the canoes were lowered, the wind being light from the southeast and the sea smooth. The barometer indicated no change, but in a short time the wind began to increase. No seals were observed either by the small boats or from the vessel during the day.

On September 19 the weather was similar to that of the previous day. Four seals were seen, 2 asleep, the others traveling to the north-northeast. The former did not awake until the swash of the water from our bow struck them. In the evening we headed for Unimak Pass. As the season was now late it was thought inadvisable to remain longer in the sea. The condition for the last ten days had convinced the captain that little, if any, more sealing weather could be expected.

The next morning we sighted the schooner *San Jose*, which had made a catch of 600 skins. Her captain came on board and reported that until recently he had been hunting northwest of the Pribilof Islands. In that region seals were abundant, but the weather had been too stormy to operate. On September 13, in latitude 58° 30′ north, longitude 172° 30′ west, several hundred seals had been observed, but the sea was too rough for lowering the boats. In the latter part of August the *San Jose* had hunted near Unimak Pass, but few seals were found there.

At 10 a. m., the wind being light, 8 of the canoes were put over, but at 2 p. m. a dense fog settled down. Ten seals were secured, 4 males and 6 females. They were all small, and their stomachs were empty. On this ground birds were plentiful and one orca was observed. At 2.45 p. m. we continued on our course, and at 6 p. m. Cape Cheerful bore abeam about 15 miles. The next day we were off the northern entrance of Unimak Pass, four other sealers being in sight. In the evening we cleared the southern entrance of the Pass and shaped a course for Cape Flattery. On the morning of October 8 we anchored off Ucleuet, an Indian village situated on the north side of Barclay Sound, Vancouver Island, where most of our Indians belonged. We reached Victoria on October 8, having been twenty days on the passage home.

OBSERVING SEALS.

In sealing weather hunters do not wait until seals have been seen from the vessel before lowering the boats. They start out as early as possible and search for them, as otherwise the catch of the entire fleet would be small. Very often when no seals are observed from the vessel's deck the boats will be among bunches of them, only a mile or two away, and, on the other hand, it sometimes happens that when scattered seals are

CANADIAN SEALING SCHOONER DORA SIEWERD UNDER STORM CANVAS, SHOWING MANNER OF STOWING CANOES.

noticed from the deck the boats may be cruising over barren ground. As a rule, however, the number observed from the vessel is small as compared with the number sighted from the boats. A vessel while jogging will naturally frighten a great many which lie in her path; the flapping of the canvas and the creaking and slatting of the booms arouse the sleepers long before they can be seen, and give them ample time to escape. In the early days of pelagic sealing the boats used to be stationed at different distances and in different directions from the vessel, and would drift, waiting for seals to come near. This method, however, proving unremunerative, it was given up, and the hunters began to cruise, which custom they have continued to follow ever since.

MANNER OF COUNTING THE SEXES.

Considerable controversy has arisen from the accounts rendered by sealing captains regarding the proportion of male and female seals taken in the North Pacific Ocean and Bering Sea. Previous to the time when sealing vessels were required to enter the number of each sex taken in their official logs little thought was given to this question, and it was always claimed that the two sexes occurred in about equal numbers. All sealers knew which sex predominated, but clung to their original story, and there was no one who could controvert their assertions, although there was every reason to doubt them. An order from the United States Treasury Department requiring the catch of all American sealers to be examined on their arrival in port was the means of throwing considerable light on the subject, and the information gained from this source fully established the fact of the great preponderance of females.

It has generally been supposed by most sealers, and the view is still entertained by many, that if it were known that a greater number of females than males were taken it would greatly affect and possibly restrict their privileges when the time came for a readjustment of pelagic regulations. The fact has generally been lost sight of that the condition of the rookeries at the end of five years will have the most weight in deciding that matter.

That pelagic sealers should pay little attention to the sexes of the seals taken was but natural, as they had no object in determining which sex predominated, the thought uppermost in their minds being to capture as many seals as possible.

No check is placed upon the official logs of the Canadian sealers by the custom-house officials at Victoria, who accept such records as authentic. If the skins landed at Victoria were subjected to the same rigid examination as those landed in United States ports, little or no difference would be found in the proportion of each sex represented in the catch by the vessels of the two countries. It seems strange that on several occasions when American and Canadian sealers have hunted on the same ground and in close proximity to each other, the catch of the former has always been composed largely of females and the latter of males. There are days when more males than females are taken, but such times are not frequent. It is only fair, however, to state that a number of both American and Canadian sealing captains have admitted the truth to the writer, and all United States hunters with whom he has conversed admit that the majority of seals captured off Japan and around the Commander Islands are females.

During the season of 1894 the schooner *Louis Olsen* kept an account of the seals taken off the coast of Japan, and it was found that out of 1,600 two-thirds were females. In 1895 the schooner Brenda obtained

896 seals on the same coast, fully two-thirds of which were also females, according to the statement of one of her hunters. In nearly every instance where the writer has spoken with hunters on this subject they have admitted that in all waters where the northern seal herd is found, with one exception, females largely predominate. This exception is the Fairweather ground, where, a few years previous to the beginning of the close season now in force, most of the pelagic sealing was carried on during the month of May. On this ground, as recorded by the writer in a previous report, is found a great number of large males, and according to the statement of all sealers and of others it is now quite well established that large breeding males frequent this ground in greater numbers than any other known region.

It may be well to illustrate briefly a few of the conditions under which the record of seals is kept. When seals are brought on board in small numbers it is very easy to identify the sex, but when they arrive in large quantities, a hundred or more, it requires considerable time to examine each one, and sealers have, to them, more important duties to attend to. It often happens that the hunters are forced to return on account of bad weather or an approaching storm, at which times the safety of the canoes and vessel is of more consequence than the determination of the character of the catch. When the boats and canoes are being hoisted in, the officers and men are stationed at either side of the vessel to do this work, as well as to keep the records, and, as is to be expected, in the bustle and excitement a very correct account of the sexes is not given. In many cases the seals are not examined at all. By the time the last canoe is lashed on board the weather is rough and stormy and the hunters are anxious to go below; and if it be dark the seals will be left until morning for skinning. No further examination is made, and, right or wrong, the first account rendered is accepted. The fact of the matter is, that in only a few cases is the sex correctly recorded.

Inaccuracies in this respect also result when the seals are skinned in the boats. Upon arrival at the vessel the skins are at once thrown into the hold without examination, and nobody knows or cares whether they are male or female.

Although United States revenue cutters have the privilege of boarding vessels and overhauling the catch made in Bering Sea, the conditions under which this work is carried on, however zealous the officers may be, render it difficult for the sexes to be separated, and they return to their ship little wiser than when they came.

CONDITIONS OF THE FEMALE SEALS TAKEN BY THE DORA SIEWERD.

Of the 982 female seals secured by this vessel, 882 were opened and examined by the writer. Of this number 839 were found to be adults, and 668 were clearly in milk. Many of the remaining 171 may also have been nursing females, which at the time of their capture had not obtained sufficient nourishment to cause their milk glands to fill.

SEALS MADE SHY BY HUNTING.

Inquiry was made of several captains and hunters as to whether seals were as easy to capture this year as last in Bering Sea. They all give it as their judgment that seals were more difficult to approachth is season than in 1894. Captain Cox, of the schooner *Sapphire*, said he

had noticed a marked difference in that respect, and attributed it to the hunting that had been carried on. In many cases they appeared to be unusually shy when there was no apparent cause for it.

FOOD OF SEALS.

The material which has been found in the stomachs of seals taken in different parts of Bering Sea indicates that only a small percentage is composed of fish which inhabit deep water. It is only reasonable to suppose, however, that when seals are in shallow water they feed both on bottom fish and on those swimming near the surface. A not uncommon component of their food is the red rockfish, which occurs both in deep and shallow water and possibly also near the surface at times, which would account for its being found in the stomachs of seals captured where the water is 100 fathoms or more deep.

On August 22, 1895, in latitude 55° 04′ north, longitude 168° 35′ west, the head of a macrurus was found in the stomach of a male seal. This group of fishes inhabits considerable depths and much speculation arose as to how it had been obtained by the seal. It was subsequently learned, however, that the *Albatross* had been dredging in deep water near our position from the 18th to the 22d, and during that time there had been thrown overboard many rejected specimens, among which were a number of macruri, which would be apt to float for some time at or near the surface if not molested.

It has been claimed that seals will not eat dead fish, but this is a mistake, for the writer has seen them devour salmon that had been dead several days.

Surface fishes, and especially squid, seem to be the natural food of the seal. In the stomachs that have been examined a variety of material was found, such as pieces of Alaskan pollock, salmon, and other fishes, but it has also been observed that in localities where squid are plentiful very little other food may be looked for. I am informed by hunters that on the coast of Japan and off the Commander Islands squid occur in great abundance, and that it is not an uncommon sight to see a half dozen or more seals together feeding on the tentacles of octopus floating at the surface. Sealers usually find squid plentiful off the island of Kadiak, and in that locality they have often been found in large quantities in the stomachs of the seals.

WHITE HUNTERS AT A DISADVANTAGE.

The white hunters on the *Dora Siewerd* did not have the same opportunity of getting seals as the Indians for several reasons, one of which was that, as a rule, they were the last to leave the vessel in the morning and the first to return at night. They were expected to hoist out all the canoes, and in the evening to hoist them in again, stow them away and lash them. Indians are useless in this kind of work, and upon their arrival alongside, their duties have ended, as the skinning of the seals devolves upon the steersmen.

The Indians, therefore, had every advantage in respect to hunting. On leaving a vessel the boats nearly always form a line so that each will have a clear space to windward. When all the boats start out together they are all on an equal footing; but when one or two boats, as was the case with our white hunters, are obliged to follow in the rear of others, their chance of seeing many seals is greatly lessened, for they are hunting in water already passed over, but the situation improves as the

boats become more widely separated. Sometimes, also, a sudden change of wind favors the last boats to go out and places them to windward, a coveted position which they could not otherwise have secured, a windward position being always considered the best. In perfectly calm weather one position is as good as another.

Record of the position of the vessel and of the catch of fur seals each day by the sealing schooner Dora Siewerd during a cruise in Bering Sea in August and September, 1895, showing also the number of each sex taken daily as entered in the official log of the vessel.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Aug. 1	54 28	167 08	36	6	42
2	54 41	167 51	26	19	45
3	54 43	167 00	7	6	13
4	54 37	167 20	8	8	16
9	54 42	167 43	14	6	20
10	54 58	167 31	18	55	73
11	55 10	167 40	29	60	89
12	55 02	167 48	6	9	15
14	55 03	167 45	14	16	30
15	55 08	167 40	48	51	99
15	.....	.....	(a)	(a)	12
17	55 15	168 30	38	47	85
18	55 21	168 32	1	1	2
19	54 56	168 00	2	2	4
20	55 15	168 15	44	67	111
21	55 28	168 05	26	43	69
22	55 06	168 38	20	24	44
24	55 26	168 30	10	11	21
26	55 15	171 55	74	83	157
27	55 08	171 45	68	78	146
28	55 06	170 43	28	29	57
31	55 02	170 10	5	6	11
Sept. 1	55 28	170 26	191	145	336
2	55 25	170 50	6	4	10
8	56 32	172 50	7	3	10
9	55 51	171 56	4	5	9
10	55 55	171 45	5	12	17
15	55 18	170 06	16	8	24
20	54 36	167 33	5	5	10
Total	.....	.....	756	809	1,577

a On August 15 a canoe went astray, but afterwards returned, bringing in 12 skins, of which the sexes were not determined.

Record of the catch of fur seals and of the number of each sex taken daily by the sealing schooner Dora Siewerd during a cruise in Bering Sea in August and September, 1895, as determined by A. B. Alexander.

Date.	Males.	Females.	Total.	Date.	Males.	Females.	Total.
1895.				1895.			
Aug. 1	34	8	42	Aug. 22	12	32	44
2	26	19	45	24	10	11	21
3	6	7	13	26	62	95	157
4	8	8	16	27	68	78	146
9	13	7	20	28	14	43	57
10	18	55	73	31	5	6	11
11	10	79	89	Sept. 1	120	216	336
12	3	12	15	2	6	4	10
14	14	16	30	8	7	3	10
15	31	68	99	9	4	5	9
15	(a)	(a)	12	10	5	12	17
17	28	57	85	15	16	8	24
18	1	1	2	20	4	6	10
19	2	2	4				
20	44	67	111	Total	583	982	1,577
21	12	57	69				

a On August 15 twelve skins were taken, of which the sexes were not determined.

Approximate ages of the seals and the number of nursing females taken during the cruise of the sealing schooner Dora Siewerd in Bering Sea in August and September, 1895, based upon examinations made by A. B. Alexander.

Date.	Males.		Females.		Number of nursing females.	Number not examined.
	Number taken.	Age.	Number taken.	Age. *a*		
1895.		*Years.*		*Years.*		
Aug. 1	3	5	5	ad.	5	.....
	21	3	3	2	.....	.....
	10	2	.....	.....	.....	.....
2	18	3	17	ad.	17	.....
	8	2	2	2	.....	.....
3	6	3 to 5	6	ad.	6	.....
	.....	.....	1	2	.....	.....
4	5	4	4	ad.	4	.....
	3	5	4	2	.....	.....
9	12	4	7	ad.	6	.....
	1	5	.....	.....	.....	.....
10	1	6	55	ad.	47	.....
	8	4	.....	.....	.....	.....
	9	3	.....	.....	.....	.....
11	10	3 to 5	70	ad.	50	24
	.....	.....	9	2	.....	.....
12	2	4	9	ad.	9	.....
	1	5	3	2	.....	.....
14	12	3	16	ad.	16	.....
	2	4	.....	.....	.....	.....
15	27	5	60	ad.	58	.....
	4	4	8	2	.....	.....
16	.....	.....	1	ad.	.....	.....
17	20	4	57	ad.	35	.....
	8	5	.....	.....	.....	.....
18	1	3	1	ad.	1	.....
19	2	4	2	ad.	2	.....
20	35	4	67	ad.	62	.....
	9	5	.....	.....	.....	.....
21	5	4	54	ad.	48	.....
	4	3	3	2	.....	.....
	3	2	.....	.....	.....	.....
22	12	4	28	ad.	28	.....
	.....	.....	4	2	.....	.....
24	10	5	11	ad.	11	.....
26	50	4 to 5	92	ad.	65	72
	12	3	3	2	.....	.....
27	65	3 to 4	78	ad.	74	60
	3	4 to 5	.....	.....	.....	.....
28	14	3 to 5	43	ad.	37	.....
31	5	3 to 5	6	ad.	4	.....
Sept. 1	119	3 to 4	216	ad.	80	156
	1	5	.....	.....	.....	.....
2	6	4 to 5	4	ad.	3	.....
8	5	4 to 5	3	ad.	3	.....
	2	1	.....	.....	.....	.....
9	4	2 to 3	3	ad.	3	.....
	.....	.....	2	1 to 2	.....	.....
10	5	2 to 4	11	ad.	11	.....
	.....	.....	1	1	.....	.....
15	14	2 to 3	8	ad.	3	.....
	2	4 to 5	.....	.....	.....	.....
20	3	3	6	ad.	.....	.....
	1	5	.....	.....	.....	.....

a All females above 2 years old are classed as adults, "ad."

Record of physical observations made during the cruise of the sealing schooner Dora Siewerd in Bering Sea, August and September, 1895, by A. B. Alexander.

Date.	Time of day.	Temperature.		Wind.		Barometer reading.	Noon position.	
		Air.	Surface water. a	Direction.	Force.		Latitude.	Longitude.
1895.		°	°		*Miles.*		N.	W.
Aug. 1	8 a. m	51	47	ENE.	3	29.90		
	10 a. m	49	47	NE.	2			
	12 m	48	47	NE. by E.	2	29.92	54 25	167 04
	4 p. m	47	47	NE.	2	29.90		
	8 p. m					29.90		
2	7 a. m	47	45	NNW.	2			
	8 a. m	48	45	NNW.	2	29.90		
	10 a. m	48	46	NNW.	3		54 51	167 52
	12 m	48	46	NW. by W.	3	29.90		
	2 p. m	48	46	NNW.	3			
	4 p. m	48	46	W.	4	29.90		
	6 p. m	47	46	NW.	4			
	8 p. m					29.92		
3	7 a. m	47	47	NW. by N.	3			
	8 a. m	47	47	NW. by N.	3	29.92		
	10 a. m	47	47	NW. by N.	3			
	12 m	47	47	NW.	4	30.00	54 43	167 00
	2 p. m	48	47	NW.	4			
	4 p. m	47	46	NW.	4	30.00		
	6 p. m	45	46	NNW.	5			
	8 p. m	44	46	NNW.	4	30.10		
4	8 a. m	45	43	NW. by W.	4	30.14		
	10 a. m	45	44	WNW.	3			
	12 m	46	46	W.	3	30.20	54 37	167 25
	2 p. m	45	46	W.	3			
	4 p. m	44	46	W. by S.	3	30.20		
	6 p. m	44	46	W.	2			
	8 p. m					30.10		
5	8 a. m	45	46	W. by S.	3	30.10		
	10 a. m	45	45	S. by E.	4			
	12 m	45	45	SSE.	4	30.10	55 01	168 07
	4 p. m	46	47	S. by E.	5	30.08		
	8 p. m	45	44	S.	4	30.00		
6	8 a. m	45	46	SE.	8	29.76		
	10 a. m	45	46	SE.	8			
	12 m	45	46	S. by E.	7	29.65	54 45	167 50
	4 p. m	46	46	S.	7	29.64		
	8 p. m	46	46	S. by W.	8	29.50		
7	8 a. m	46	43	SW.	7	29.60		
	12 m	46	43	SSW.	6	29.71	54 56	167 27
	2 p. m	46	44	SW.	5			
	4 p. m	46	45	SW.	5	29.74		
	8 p. m	46	44	SW.	6	29.74		
8	8 a. m	45	45	WSW.	6	29.78		
	10 a. m	46	45	W.	6			
	12 m	46	45	W.	6	29.78	55 01	167 30
	4 p. m	45	46	SW. by W.	6	29.80		
	6 p. m	45	46	SW. by W.	6			
	8 p. m	44	46	SW.	6	29.82		
9	8 a. m	47	45	WSW.	4	29.96		
	10 a. m	47	44	WSW.	3			
	12 m	48	44	W. by S.	3	29.98	54 42	167 45
	2 p. m	47	44	W. by N.	4			
	4 p. m	45	44	W. by N.	5	29.98		
	8 p. m	45	44	W. by N.	4	30.00		
10	7 a. m	43	46	W. by N.	3			
	8 a. m	45	46	W. by N.	3	30.20		
	10 a. m	45	46	W. by S.	3			
	12 m	44	47	W.	3	30.20	54 58	167 31
	2 p. m	45	47	SW. by W.	3			
	4 p. m	45	47	SW. by W.	2	30.20		
	6 p. m	45	47	SW. by W.	2			
	8 p. m					30.20		
11	8 a. m	46	46	Var.	1	30.12		
	10 a. m	46	46	WNW.	1			
	12 m	47	47	Var.	1	30.10	55 00	167 45
	2 p. m	47	47	Var.	1			
	4 p. m	46	46	N.	2	30.00		
	8 p. m	45	46	NE.	2	29.98		
12	8 a. m	46	46	WNW.	3	30.00		
	10 a. m	47	47	W. by N.	3			
	12 m	47	47	W.	3	30.00	55 06	167 50
	2 p. m	47	46	W. by N	3			
	4 p. m	47	46	W. by N.	2	30.12		
	6 p. m	46	46	W. by N.	3			
	8 p. m					30.20		

a The temperature of the water was taken 5 feet below the surface.

Record of physical observations made during the cruise of the sealing schooner Dora Siewerd in Bering Sea, August and September, 1895, by A. B. Alexander—Continued.

Date.	Time of day.	Temperature.		Wind.		Barometer reading.	Noon position.	
		Air.	Surface water. *a*	Direction.	Force.		Latitude.	Longitude.
1895.		°	°		*Miles.*		N.	W.
Aug. 13	8 a. m	48	45	SW. by W.	5	30.20	54 56	168 15
	2 p. m	45	45	WSW.	5	30.20		
14	8 a. m	46	44	WSW.	5	30.28		
	10 a. m	46	45	WSW.	5			
	12 m	48	45	SW.	4	30.30	55 03	167 45
	2 p. m	47	45	WSW.	4			
	4 p. m	46	45	WSW.	3	30.30		
	8 p. m	46	45	WSW.	3	30.30		
15	8 a. m	46	44	W.	1	30.32		
	10 a. m	48	45	Var.	1			
	12 m	49	45	Var.	1	30.32	55 08	167 40
	2 p. m	49	45	Var.	1			
	4 p. m	47	45	SE.	1	30.00		
	6 p. m	46	45	ESE.	2			
	8 p. m					30.28		
16	8 a. m	48	44	SSE.	6	30.00		
	12 m	47	44	SSE.	4	30.00	55 07	168 10
	2 p. m	46	44	SSE.	3			
	4 p. m	46	46	SSE.	3	29.96		
	8 p. m					29.96		
17	8 a. m	47	45	ESE.	1	29.98		
	10 a. m	48	45	Calm.	0			
	12 m	48	46	SE.	1	30.00	55 15	168 30
	2 p. m	49	46	SE.	1			
	4 p. m	49	46	Calm.	0	29.98		
	8 p. m	47	46	SSE.	2	29.94		
18	8 a. m	49	45	SE. by S.	5	29.78		
	10 a. m	49	45	SE. by S.	5			
	12 m	49	45	SSE.	4	29.72	55 21	168 32
	2 p. m	49	45	S. by W.	3			
	4 p. m	49	45	SSW.	3	29.65		
	6 p. m	49	45	SW. by S.	3			
	8 p. m					29.65		
19	8 a. m	46	46	SW. by W.	3	29.72		
	10 a. m	47	47	SW. by W.	4			
	12 m	46	47	SW.	4	29.72	54 56	168 00
	2 p. m	46	46	SW.	3			
	4 p. m	46	45	SW.	3	29.70		
	6 p. m	46	45	SW.	3			
	8 p. m	46	45	SW. by S.	3	29.70		
20	8 a. m	46	46	W.	2	29.62		
	10 a. m	48	47	W.	2			
	12 m	48	47	WNW.	2	29.68	55 14	168 15
	2 p. m	48	47	WNW.	2			
	4 p. m	48	47	WNW.	2	29.78		
	8 p. m	47	47	WNW.	2	29.78		
21	8 a. m	46	46	NW. by W.	2	29.90		
	10 a. m	48	47	WNW.	2			
	12 m	47	46	WNW.	2	29.92	55 29	168 05
	2 p. m	47	47	WNW.	3			
	4 p. m	47	47	WNW.	3	29.91		
	6 p. m	47	47	WNW.	3			
	8 p. m	47	47	WNW.	3	29.91		
22	8 a. m	47	47	W. by N.	3	30.10		
	10 a. m	48	47	NW. by W.	2			
	12 m	49	48	WSW.	2	30.08	55 04	168 35
	2 p. m	48	47	WSW.	2			
	4 p. m	46	47	WSW.	2	30.08		
	6 p. m	47	47	WSW.	3			
	8 p. m					30.10		
23	8 a. m	47	46	S. by W.	3	30.00		
	10 a. m	46	46	SSW.	4			
	12 m	47	47	SSW.	4	30.00	55 28	168 10
	2 p. m	47	47	S. by W.	4			
	4 p. m	46	47	SSW.	5	29.98		
	6 p. m	46	47	SSW.	5			
	8 p. m	46	47	S. by W.	5	29.98		
24	8 a. m	47	46	SW.	1	30.00		
	10 a. m	47	46	NNE.	1			
	12 m	47	47	N.	4	30.10	55 27	168 30
	2 p. m	47	47	N.	5			
	4 p. m	47	47	N.	5	30.10		
	6 p. m	45	47	NNE.	5			
	8 p. m					30.10		
25	8 a. m	48	47	N. by E.	7	30.20		
	10 a. m	48	47	N. by E.	7			
	12 m	48	47	N. ½ E.	6	30.20	55 15	170 [illegible]

a The temperature of the water was taken 5 feet below the surface.

Record of physical observations made during the cruise of the sealing schooner Dora Siewerd in Bering Sea, August and September, 1895, by A. B. Alexander—Continued.

Date.	Time of day.	Temperature.		Wind.		Barometer reading.	Noon position.	
		Air.	Surface water.[a]	Direction.	Force.		Latitude.	Longitude.
1895.		°	°		*Miles.*		N.	W.
Aug. 25	2 p. m.	47	47	N.	6			
	4 p. m.	47	47	N.	6	30.20		
	8 p. m.	47	47	N.	6	30.18		
26	8 a. m.	45	47	N.	2	30.08		
	10 a. m.	45	47	NW. by N.	2			
	12 m	46	47	WNW.	1	30.00	55 15	170 53
	2 p. m.	45	47	WSW.	2			
	4 p. m.	46	47	WSW.	2	29.98		
	6 p. m.	45	47	WSW.	2			
	8 p. m.					29.95		
27	8 a. m.	45	47	WNW.	1	29.92		
	10 a. m.	46	47	SW.	1			
	12 m	48	48	W. by S.	1	29.90	55 10	170 47
	2 p. m.	49	48	W.	2			
	4 p. m.	46	49	W. by N.	2	29.90		
	6 p. m.	44	49	NNE.	2			
	8 p. m.					29.98		
28	8 a. m.	44	48	W. by S.	2	29.82		
	10 a. m.	46	48	SW. by S.	3			
	12 m	46	48	SW.	3	29.90	55 07	170 45
	2 p. m.	46	48	S. by W.	3			
	4 p. m.	46	48	S. by E.	3	29.76		
	6 p. m.	45	48	SE.	3			
	8 p. m.					29.70		
29	8 a. m.	47	47	SE.	8	29.40		
	10 a. m.	47	47	SE.	8			
	12 m	48	47	S. by E.	8	29.40	55 28	170 15
	2 p. m.	48	47	S.	7			
	4 p. m.	48	47	S. by W.	6	29.50		
	6 p. m.	48	47	S. by W.	6	29.52		
	8 p. m.							
30	8 a. m.	48	47	SW. by S.	8	29.80		
	10 a. m.	48	47	SW. by S.	8			
	12 m	48	47	SW. by S.	8	29.85	55 25	170 10
	2 p. m.	48	47	SW. by S.	8			
	4 p. m.	48	47	SW. by S.	8	29.90		
	8 p. m.	48	47	SW. by S.		29.94		
31	8 a. m.	48	47	SW.	4	30.40		
	10 a. m.	48	47	SW.	4			
	12 m	48	47	SW. by W.	4	30.50	55 11	170 05
	2 p. m.	48	47	SW.	4			
	4 p. m.	48	47	SW. by W.	3	30.52		
	6 p. m.	48	47	SW. by W.	3			
	8 p. m.					30.60		
Sept. 1	8 a. m.	45	47	SW.	1	30.60		
	10 a. m.	46	47	Var.	1			
	12 m	46	47	Var.	1	30.58	55 29	170 26
	2 p. m.	49	47	Var.	1			
	4 p. m.	45	47	Var.	1	30.58		
	6 p. m.	45	47	NW.	1			
	8 p. m.					30.60		
2	8 a. m.	45	47	NE. by N.	3	30.60		
	10 a. m.	47	47	NE. by N.	4			
	12 m	46	47	NE. by N.	4	30.60	55 25	170 50
	2 p. m.	45	47	NE.	4			
	4 p. m.	45	47	NE.	4	30.58		
	6 p. m.	44	47	NE.	4			
	8 p. m.					30.56		
3	8 a. m.	45	47	NE.	5	30.40		
	10 a. m.	45	47	NE. by E.	5			
	12 m	46	47	NE.	5	30.40	55 29	170 36
	2 p. m.	46	47	NE. by E.	6			
	4 p. m.	45	47	NE. by E.	6	30.40		
	6 p. m.	45	47	NE. by E.	6			
	8 p. m.			NE. by E.	6	30.40		
4	8 a. m.	45	46	E.	7	30.20		
	10 a. m.	45	46	ENE.	8			
	12 m	46	47	ENE.	8	30.15	55 55	170 50
	2 p. m.	46	47	ENE.	8			
	4 p. m.	46	47	ENE.	8	30.14		
	6 p. m.	46	47	ENE.	8			
	8 p. m.			ENE.	8	30.12		
5	8 a. m.	46		ENE.	8	30.00		
	10 a. m.	46		ENE.	8			
	12 m	46		ENE.	8	29.98	55 22	170 15
	2 p. m.	46		ENE.	8			
	4 p. m.	46		ENE.	8	29.95		

[a] The temperature of the water was taken 5 feet below the surface.

Record of physical observations made during the cruise of the sealing schooner Dora Sieverd in Bering Sea, August and September, 1895, by A. B. Alexander—Continued.

Date.	Time of day.	Temperature.		Wind.		Barometer reading.	Noon position.	
		Air.	Surface water. *a*	Direction.	Force.		Latitude.	Longitude.
1895.		°	°		*Miles.*		N.	W.
Sept. 5	8 p. m.			ENE.	8	29.96		
6	8 a. m.	46		NE. by E.	9	30.00		
	10 a. m.	47		NE. by E.	8			
	12 m	47		NE. by E.	8	30.10	56 10	170 45
	2 p. m.	47		NE. by E.	8			
	4 p. m.	47		NE. by E.	8	30.10		
	6 p. m.	47		NE. by E.	8			
	8 p. m.			NE. by E.	8	30.20		
7	8 a. m.	47	46	E. by N.	4	30.30		
	10 a. m.	47	46	E. by N.	4			
	12 m	47	45	E.	4	30.31	56 22	171 50
	2 p. m.	46	45	E.	3			
	4 p. m.	46	45	E.	3	30.32		
	6 p. m.	46	45	E.	3			
	8 p. m.			E.	3	30.38		
8	8 a. m.	46	46	E. by S.	2	30.40		
	10 a. m.	48	46	E.	3			
	12 m	45	46	E.	3	30.40	56 35	172 20
	2 p. m.	45	46	E.	3			
	4 p. m.	44	45	E.	3	30.40		
	6 p. m.	44	45	E.	3			
	8 p. m.			E.	3	30.40		
9	8 a. m.	47	47	E. by N.	4	30.18		
	10 a. m.	47	47	E. by N.	4			
	12 m	47	47	E. by N.	4	30.10	55 49	171 54
	2 p. m.	47	47	E. by N.	3			
	4 p. m.	47	47	SE.	3	30.02		
	6 p. m.	46	47	SE.	2			
	8 p. m.			SE.	2	30.00		
10	8 a. m.	47	46	ESE.	3	29.90		
	10 a. m.	47	47	ESE.	3			
	12 m	47	47	E.	3	29.80	55 50	171 49
	2 p. m.	48	47	E. by S.	3			
	4 p. m.	47	47	ESE.	3	29.60		
	6 p. m.	47	47	SE. by E.	4			
	8 p. m			SE. by E.	4	29.55		
11	8 a. m.	46	47	S. by E.	7	29.40		
	10 a. m.	47	47	S. by W.	7			
	12 m	47	47	S. by W.	7	29.38	55 57	171 30
	2 p. m.	47	47	S.	7	29.35		
	4 p. m.	47	47	S.	7	29.35		
	6 p. m.	46	47	S.	7			
	8 p. m.			S.	7	29.32		
12	8 a. m.	45		SW.	8	29.40		
	10 a. m	46		SW. by W.	8			
	12 m	46		WSW.	9	29.55	55 44	171 30
	2 p. m.	46		WSW.	9			
	4 p. m.	45		WSW.	8	29.65		
	6 p. m.	45		WSW.	8			
	8 p. m.			WSW.	8	29.72		
13	8 a. m.	44	44	W. by S.	4	29.90		
	10 a. m	46	44	SW. by W.	5			
	12 m	46	45	W. by S.	4	29.90	55 44	171 51
	2 p. m.	46	46	W.	3			
	4 p. m.	46	46	W.	2	29.90		
	6 p. m.	46	46	SW. by S.	3			
	8 p. m.					29.98		
14	8 a. m	47	45	SSW.	8	29.68		
	10 a. m	47	45	SSW.	8			
	12 m	47	45	SSW.	8	29.62	55 20	171 25
	2 p. m.	47	45	SSW.	8			
	4. p. m.	46	45	SW. by S.	8	29.65		
	6 p. m.	46	45	SW. by S.	8			
	8 p. m.					29.65		
15	8 a. m	44	45	Var.	1	29.60		
	10 a. m	45	45	NW.	3			
	12 m	45	45	NW.	3	29.60	55 10	170 06
	2 p. m.	44	45	NW.	4			
	4 p. m	43	45	NNW.	5	29.78		
	6 p. m.	42	45	NNW.	5			
	8 p. m.					29.80		
16	8 a. m	44	46	W.	5	30.00		
	10 a. m	46	46	W.	5			
	12 m	46	46	W.	5	30.02	55 20	170 32
	2 p. m.	42	46	W. by S.	4			
	4 p. m.	42	46	SW.	4	30.00		
	6 p. m.	42	46	SSW.	5			

a The temperature of the water was taken 5 feet below the surface.

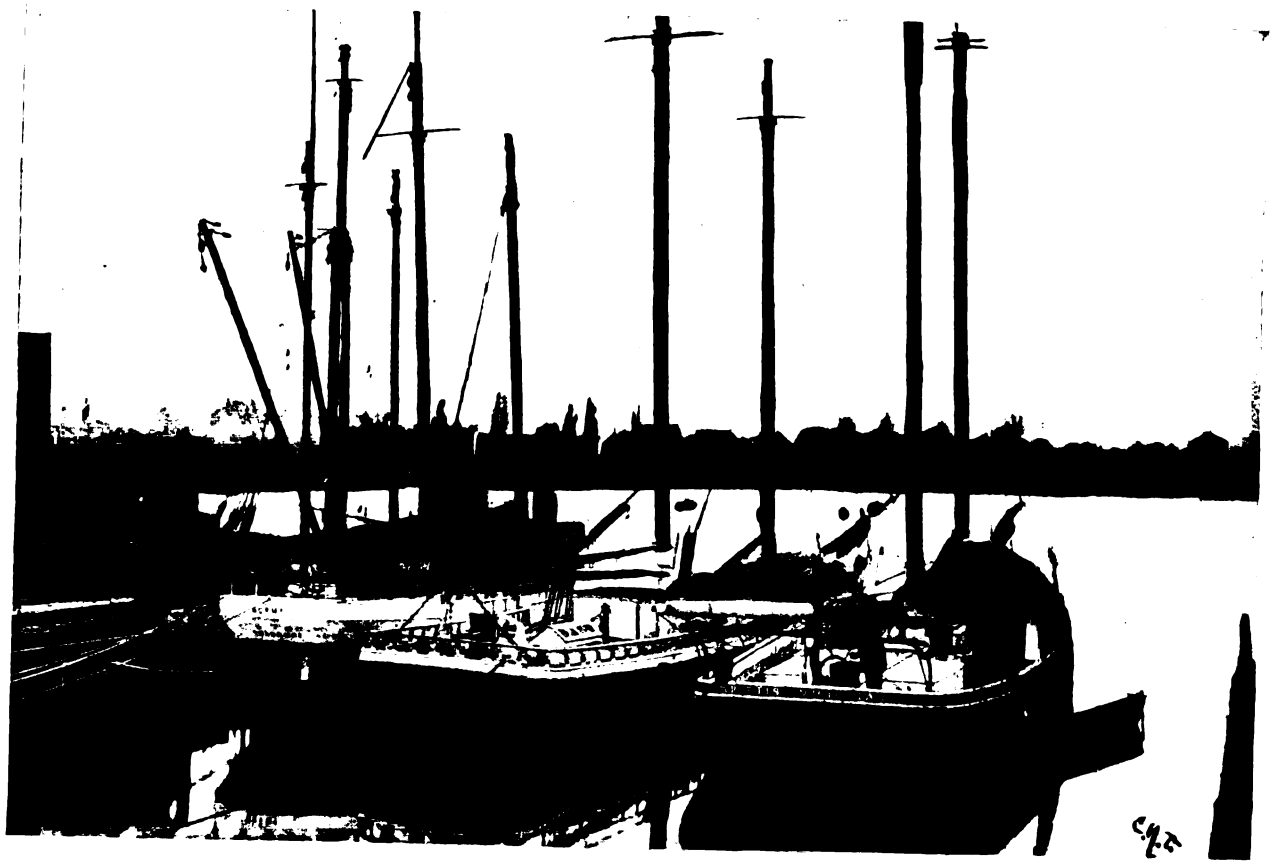
Record of physical observations made during the cruise of the sealing schooner Dora Siewerd in Bering Sea, August and September, 1895, by A. B. Alexander—Continued.

Date.	Time of day.	Temperature.		Wind.		Barometer reading.	Noon position.	
		Air.	Surface water. *a*	Direction.	Force.		Latitude.	Longitude.
1895.		°	°		*Miles.*		N.	W.
Sept. 16	8 p. m.					29.98		
17	8 a. m.	41	45	W.	4	30.40		
	10 a. m.	42	45	W.	4			
	12 m.	44	45	WN. W.	5	30.45	55 17	170 36
	2 p. m.	44	45	W.	3			
	4 p. m.	44	45	W.	3	30.50		
	6 p. m.	43	45	W.	1			
	8 p. m.					30.58		
18	8 a. m.	44	45	SE.	5	30.48		
	10 a. m.	44	45	SE.	5			
	12 m.	45	45	SE.	5	30.40	55 30	169 55
	4 p. m.	45	46	SE.	5	30.32		
	6 p. m.	45	46	SE. by S.	5			
	8 p. m.				5	30.25		
19	8 a. m.	46	45	N. E.	5	29.82		
	10 a. m.	47	46	NE. by N.	5			
	12 m.	47	46	NE. by N.	5	29.74	55 28	170 40
	2 p. m.	47	46	NE. by N.	5			
	4 p. m.	47	46	NNE.	5	29.72		
	6 p. m.	46	45	N. by E.	5			
	8 p. m.			N. by E.	5	29.70		
20	8 a. m.	45	45	NE. by N.	3	29.70		
	10 a. m.	45	45	NE. by N.	2			
	12 m.	44	45	Var.	1	29.70	55 36	167 30
	2 p. m.	43	45	SE.	2			
	4 p. m.	43	45	SE.	4	29.70		
	6 p. m.	43	45	SE. by S.	4	29.70		

a The temperature of the water was taken 5 feet below the surface.

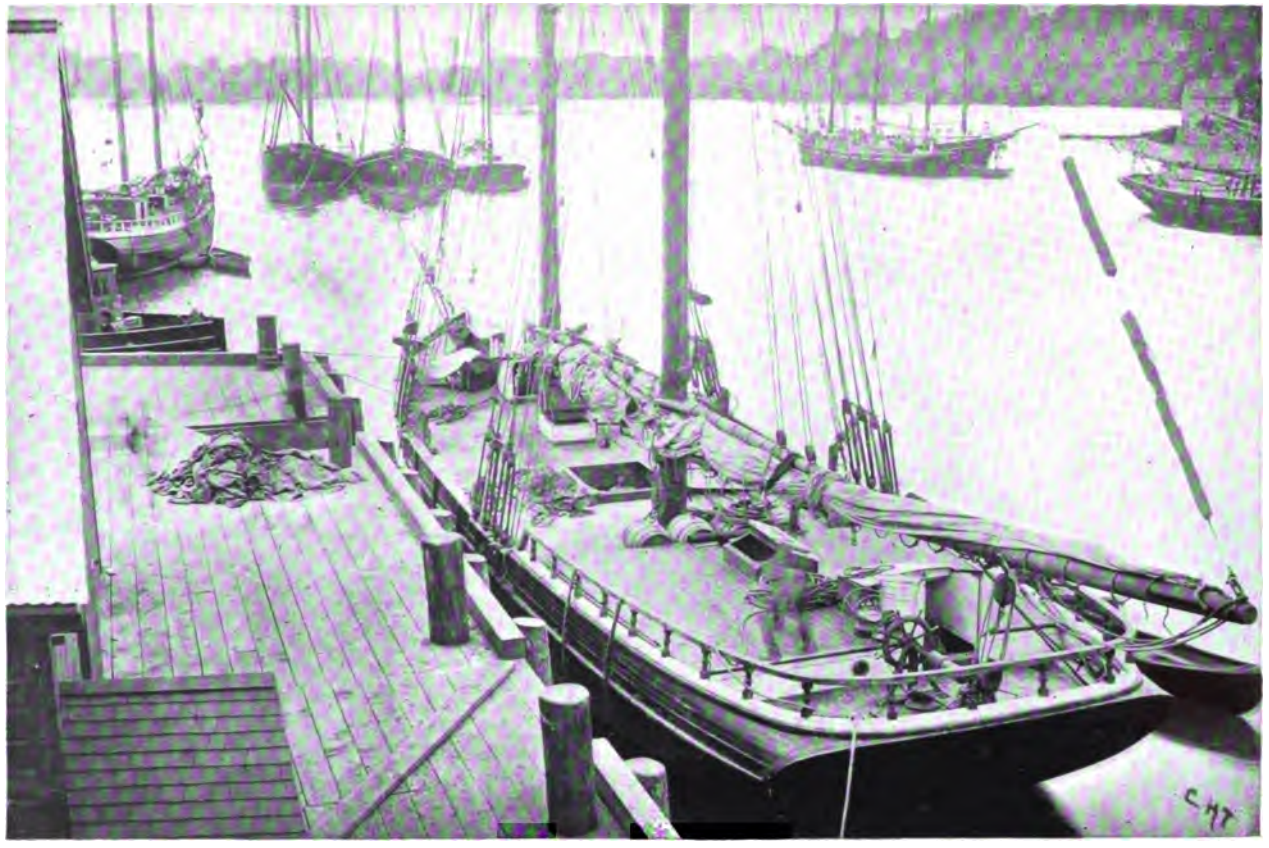
Record showing the principal food found in the stomachs of seals taken in Bering Sea by the schooner Dora Siewerd.

Date.	Number of seals taken.	Principal food found in the stomach.
1895.		
Aug. 1	42	Nearly all empty; a few could not be identified.
2	45	Do.
3	13	Empty.
4	16	Do.
9	20	A piece of squid and fish bones.
10	73	Pieces of fish and fish bones.
11	89	Do.
12	15	Do.
14	30	Pieces of squid and squid beaks.
15	99	Alaskan pollock and pieces of fish.
17	85	Squid, pieces of fish, and fish bones.
18	2	Empty.
19	4	Do.
20	111	Squid, squid beaks, fish bones, pollock, and other fish.
21	69	Squid, pollock, and salmon.
22	44	Squid, pollock, salmon, and fish bones.
24	21	Squid, squid beaks, salmon, pollock, fish bones.
26	157	Squid, pollock, and pieces of salmon.
27	146	Squid, pollock, and fish bones.
28	57	Do.
31	11	Pollock.
Sept. 1	336	Mostly squid and what looked like cod.
2	10	A few pieces of squid.
8	10	Pollock.
9	9	Empty.
10	17	Squid, squid beaks, mingled with crustacea.
15	24	Squid.
20	10	Empty.



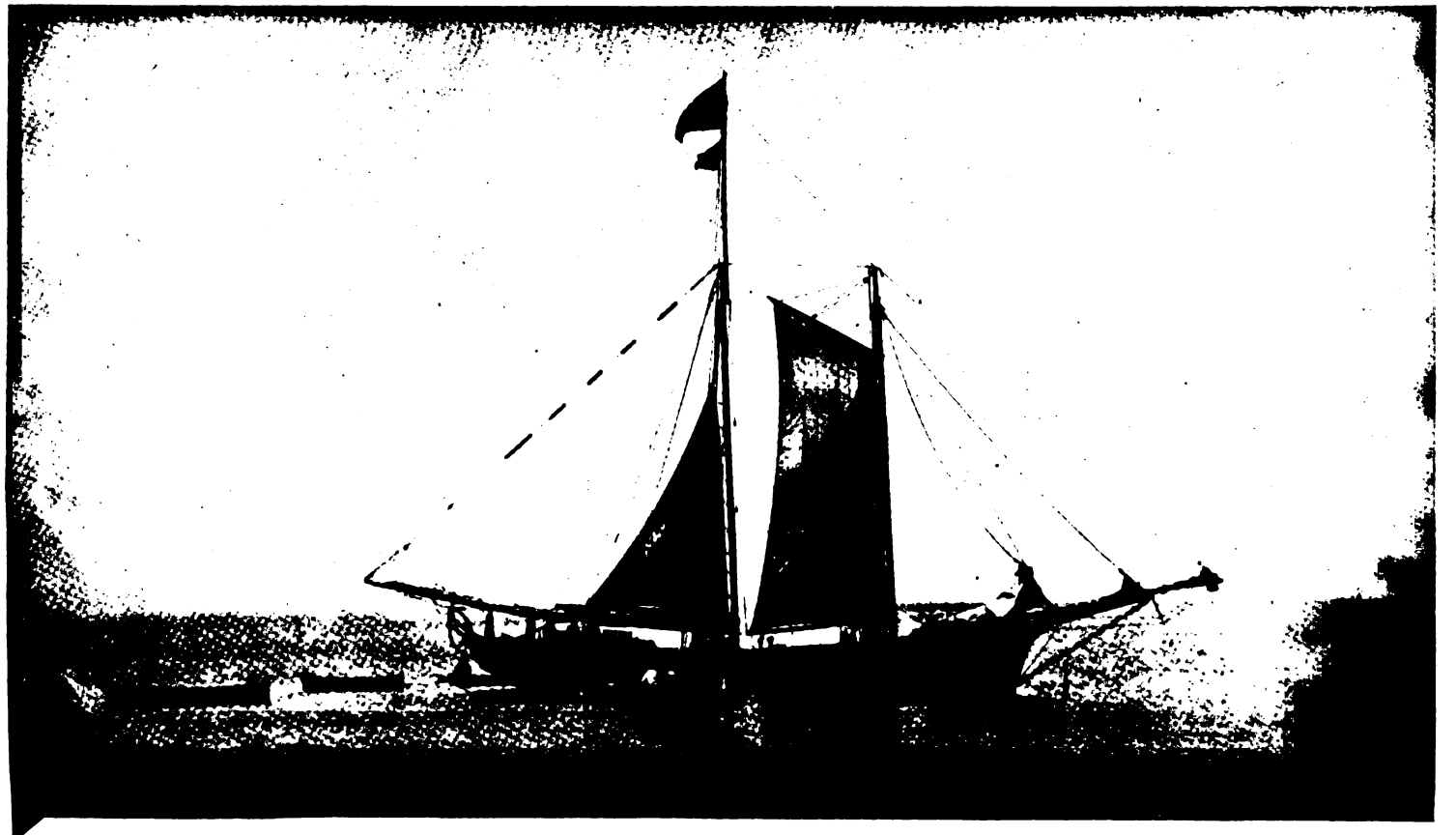
TYPES OF SEALING SCHOONERS, VICTORIA HARBOR, 1894.

TYPES OF SEALING SCHOONERS, VICTORIA HARBOR, 1894.



CANADIAN SEALING SCHOONER AINOKO.
(Discharging skins at Victoria.)

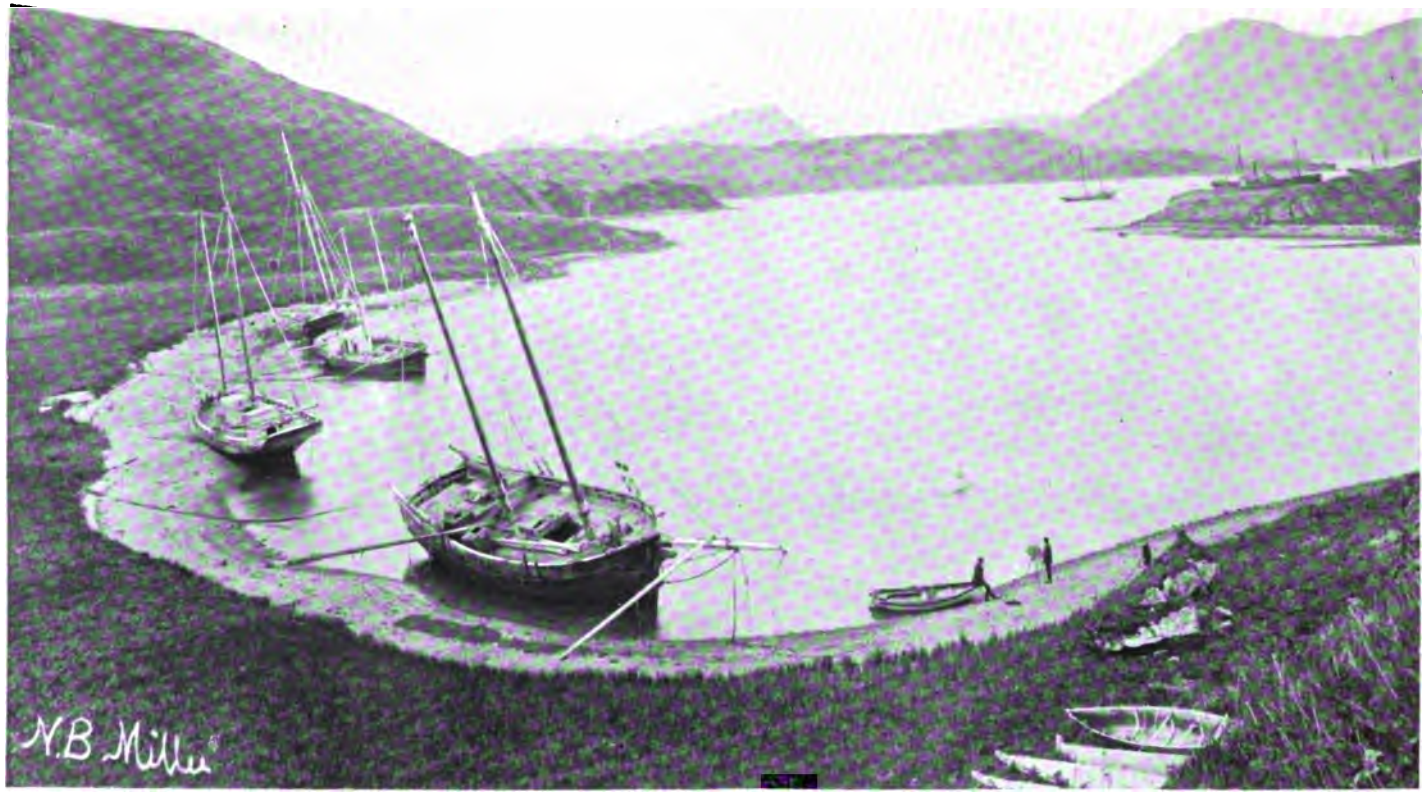
CANADIAN SEALING SCHOONER ANNIE E. PAINT, BERING SEA.



AMERICAN SEALING SCHOONER COLUMBIA, WITH CANOES, BERING SEA.

PORTION OF INDIAN CREW OF CANADIAN SEALING SCHOONER FAVORITE, 1894.

SEALING BOATS STORED AT VICTORIA.



SEALING SCHOONERS SEIZED IN BERING SEA BY UNITED STATES GOVERNMENT IN 1886, AND BEACHED AT UNALASKA.
(Thornton in foreground.)

CANADIAN SEALING SCHOONER THORNTON. SEIZED IN BERING SEA BY UNITED STATES GOVERNMENT AND BEACHED AT UNALASKA.

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